March 2022

Conservation District Use Application
Hōkū Keʻa Observatory Decommissioning Project

Prepared for University of Hawai'i at Hilo
Prepared by SSFM International, Inc.

University of Hawai'i Hilo
200 W. Kawili Street
Hilo, Hawai'i 96720

SSFM International
99 Aupuni Street, Suite 202
Hilo, Hawai'i 96720

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CONSERVATION DISTRICT USE APPLICATION (CDUA)

All permit applications shall be prepared pursuant to HAR 13-5-31

File No.:	
Acceptance Date:	180-Day Expiration Date:
Assigned Planner:	

for DLNR Use

PROJECT NAME Hōkū Keʻa Observatory Decommissioning Project

Conservation District Subzone: Resource

Identified Land Use: R-3, Astronomy Facilities
(Identified Land Uses are found in Hawai'i Administrative Rules (HAR) §13-5-22 through §13-5-25)

Project Address: Mauna Kea Science Reserve

Island of Hawai'i, Hawai'i

Tax Map Key(s): (3) 4-4-015:009

Ahupua'a: Kalopa

District: Hāmākua

County: Hawai'i

Island: Hawai'i

Proposed Commencement Date: June 2023

Proposed Completion Date: October 2023

Estimated Project Cost: $1,039,022

TYPE OF PERMIT SOUGHT ☒ **Board Permit** ☐ **Departmental Permit**

ATTACHMENTS

$ N/A Application Fee. 2.5% of project cost for Board Permits, but no less than $250, up to a maximum of $2500; $250 for Departmental Permits (*ref §13-5-32 through 34)*.

$ N/A Public Hearing Fee *($250 plus publication costs; ref §13-5-40)*

- ☒ 20 copies of CDUA (*5 hard + 15 hard or digital copies)*
- ☒ Draft / Final Environmental Assessment (EA) *or* Draft / Final Environmental Impact Statement (EIS) *or* Statement of Exemption
- ☐ State Historic Preservation Division HRS 6E Submittal Form (dlnr.hawaii.gov/shpd/review-compliance/forms)
- ☐ Management Plan *or* Comprehensive Management Plan (*ref §13-5-39)* if required
- ☐ Special Management Area Determination *(ref Hawai'i Revised Statutes 205A)*
- ☐ Shoreline Certification (*ref §13-5-31(a)(8))* if land use is subject to coastal hazards.
- ☐ Kuleana documentation (*ref §13-5-31(f))* if applying for a non-conforming kuleana use.
- ☐ Boundary Determination *(ref §13-5-17)* if land use lies within 50 feet of a subzone boundary.

REQUIRED SIGNATURES

Applicant

Name: Jerry Watanabe
Title; Agency: Director, University of Hawai'i at Hilo Facilities Planning and Construction
Mailing Address: 200 W. Kawili Street
Hilo, HI 96720
Contact Person & Title: Gregory Chun, Ph.D., Executive Director
Phone: 808-933-0734
Email: gchun711@hawaii.edu
Interest in Property: Center for Maunakea Stewardship

Signature: Jerry Watanabe **Date**: 07/18/2022

Signed by an authorized officer if for a Corporation, Partnership, Agency or Organization

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Landowner (if different than the applicant)

Name: Bonnie D. Irwin
Title; Agency: Chancellor, University of Hawaii at hilo
Mailing Address: 200 W. Kawili Street, Administration Building Room 100
Hilo, HI 96720
Phone: 808-932-7348
Email: bdirwin@hawaii.edu

Signature: Bonnie D. Irwin **Date**: Jul 19, 2022

For State and public lands, the State of Hawai`i or government entity with management control over the parcel shall sign as landowner.

Agent or Consultant

Agency: SSFM International, Inc.
Contact Person & Title: Jennifer Scheffel, Sr. Planner
Mailing Address: 99 Aupuni Street, Suite 202
Hilo, HI 96720
Phone: 808-375-6038
Email: jscheffel@ssfm.com

Signature: _____ **Date**: _____

For DLNR Managed Lands

State of Hawai`i
Chairperson, Board of Land and Natural Resources
State of Hawai'i
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawai'i 96809-0621

Signature: _____ **Date: _____**

PROPOSED USE

Total size/area of proposed use (indicate in acres or sq. ft.): 0.25 acre

Please provide a detailed description of the proposed land use(s) in its entirety. Information should describe what the proposed use is; the need and purpose for the proposed use; the size of the proposed use (provide dimensions and quantities of materials); and how the work for the proposed use will be done (methodology). If there are multiple components to a project, please answer the above for each component. Also include information regarding secondary improvements including, but not limited to, grading and grubbing, placement of accessory equipment, installation of utilities, roads, driveways, fences, landscaping, etc.

Attach any and all associated plans such as a location map, site plan, floor plan, elevations, and landscaping plans drawn to scale (*ref §13-5-31)*.

The University of Hawai'i at Hilo (UH Hilo) intends to decommission the Hōkū Ke'a Observatory. The Proposed Action includes full removal of the Observatory Building and Generator Buildings and associated telecommunications and electrical infrastructure and partial (minimal) restoration.

PROJECT LOCATION

The project area is on the southeastern side of the 528-acre Astronomy Precinct within the approximately 11,288-acre Mauna Kea Science Reserve (MKSR), located at the summit of Maunakea. MKSR lands are leased to the University of Hawai'i (GL S-4191), and approximately 40.5 acres are currently used for the 13 current observatories and associated infrastructure. Hōkū Ke'a occupies approximately 0.25 acre.

The Observatory Building is a dome that is located at the south end of the summit ridge that accommodates (from north to south) the Canada-France-Hawai'i Telescope, Gemini North, the UH 2.24-m Telescope, and the United Kingdom Infrared Telescope (UKIRT) Observatory. The project site is approximately 450-feet south of UKIRT. The geographic location is north latitude 19° 49' 17.81", west longitude 155° 28' 15.47". The project site is on a narrow ridge top with a slight slope to the south-southwest and is directly adjacent to the main paved road to the summit observatories.

As shown in the attached Location Map (Attachment A), the project area has been divided into two sections: Area A and Area B. Area A contains the Observatory Building and Generator Buildings, as well as telecommunication and electrical infrastructure. Area B contains telecommunication and electrical infrastructure associated with the Observatory Building and Generator Buildings, as well as the UKIRT observatory and utility building/lunchroom that are not included as part of the proposed project.

Site photos are included in Attachment B.

PURPOSE AND NEED

The Purpose of the project is to decommission and remove the Hōkū Ke'a Observatory Building, Generator Building, and associated telecommunications and electrical infrastructure as part of the University's commitment to reduce its footprint at the summit of Maunakea.

The project is needed to meet the University's commitment to reduce its footprint at the summit of Maunakea. While the Hōkū Ke'a telescope was intended to play a critical role in the educational mission of UH Hilo's Department of Physics and Astronomy, it did not achieve satisfactory operational

performance. Therefore, UH Hilo has ceased efforts to bring it into full operation and the facility needs to be decommissioned. Hōkū Keʻa is the first of four telescopes to be decommissioned, which also includes the Caltech Submillimeter Observatory (CSO) and one other to be determined later.

PROJECT DESCRIPTION

The project includes full removal and partial restoration. Specifically, the project would include complete removal of the Hōkū Keʻa Observatory Building and Generator Building in Area A, including demolition of the observatory dome and generator building, foundation removal, and removal of underground utilities; conductor removal in Area B; restoration in Area A, including backfilling with local native cinder, compacting excavated areas, and installation of a boulder barrier on the top of the slope. Site deconstruction and restoration plans are included in Attachment C.

SITE DECONSTRUCTION AND REMOVAL

Site deconstruction and removal will include installation of best management practices (BMPs), Observatory Building demolition and debris removal, Generator Building demolition and debris removal, and conductor removal and partial conduit removal, and utility room electrical demolition and debris removal.

BMPs will be installed prior to any site deconstruction activities. BMPs will include a truck washdown area outside the project site, construction fence around the project site, silt fence or equivalent controls to prevent runoff from the site to adjacent area, and a construction entrance.

Demolition of both the Observatory Building and Generator Building will include hazardous material remediation for lead-containing paint (LCP), interior electrical demolition, removal of telescope steel base, and building demolition. Electrical demolition within the Observatory Building will consist of removal of all existing electrical conduit, light fixtures, outlets, wiring, and equipment and wiring devices in the building. All feeders will be completely removed back to the main service and disconnected. Debris removal will include building debris, concrete pad debris, and electrical debris.

Electrical conduit and conductor removal will include toning, trenching, conduit removal, and capping. It is assumed that direct buried conduits are 18 inches under existing grade. Power and telephone cables will be removed from inside the conduits from the Observatory Building and Generator Building to their source. Conduits will be demolished from the Observatory Building to the roadway. The remaining existing conduit will be capped and remain in place. The existing transformer powers UH88 and will remain in place.

Electrical components associated with Hōkū Keʻa in the electrical room of the lunchroom will be removed. This includes removal of all cabling in the fiber optic panel that serves the Observatory Building, conduit above the ceiling, non-fused disconnect switch, telephone cabling and equipment, and telephone conduit. All other electrical infrastructure not associated with Hōkū Keʻa will remain in place.

SITE RESTORATION

Site restoration will restore the site to a basic topography consistent with the area. Only minor grading consisting of cuts and fills of less than approximately one foot may be required to achieve design finish grades. Excavation and backfilling of existing foundations and utility lines of up to approximately two to three feet may be required.

Fill material will be granular fill including coarse to fine particles with no particles larger that three inches

in diameter with a California Bearing Ratio (CBR) value of 20 or higher and a swell potential of 1% or less. Fill material will contain less than 30% particles passing the Number 200 sieve (i.e., less than 74 microns). Excavated on-site materials may be reused as a source of granular fill if they meet these requirements. Stockpiles of fill materials at other areas of Maunakea may also be used as a source of imported fill. Imported fill materials will be free of organics and deleterious materials and will be suitable for the intended use.

Select granular fill will be placed in eight-inch loose lifts, moisture conditioned to above the optimum moisture content, and compacted. Areas not subject to vehicular traffic will be compacted to a minimum of 85% relative compaction; areas subject to vehicular traffic will be compacted to a minimum 90% relative compaction. Moisture conditioning will be achieved by sheepsfoot rollers, vibratory rollers, or other types of acceptable compaction equipment. Water tamping, jetting, or ponding will not be used.

The cut subgrades and areas to be filled will be scarified to a depth of about eight inches, moisture conditioned to above the optimum moisture content, and compacted. Areas not subject to vehicular traffic will be compacted to a minimum of 85% relative compaction; areas subject to vehicular traffic will be compacted to a minimum 90% relative compaction.

Cut slopes planned at the site exposing cinder and volcanic ash materials are designed with a maximum slope inclination of two horizontal to one vertical (2H:1V). Permanent fill slopes constructed of select granular fill materials are also designed with a maximum slope inclination of 2H:1V. Any fills placed on slopes steeper than 5H:1V will be benched. The fill slope face will be finished to a relatively smooth and well-compacted surface. Filling operations will start at the lowest point and continue up in level horizontal compacted layers in accordance with the fill placement requirements discussed above. Fill slopes will be constructed by overfilling and cutting back to the design slope ratio to obtain a well-compacted slope face.

Upon completion of site preparation, fill placement, and compaction, a boulder barrier will be placed along the top of the slope on the west side of the project site. Boulders will be sourced from the opposite side of Mauna Kea Access Road from the project site. Boulders will be approximately 3.5 feet in diameter and spaced no more than six feet apart.

EXISTING CONDITIONS

Please describe the following, and attach maps, site plans, topo maps, colored photos, and biological or archaeological surveys as appropriate:

Existing access to site:

Access to the project site is via Saddle Road (Route 200) to Mauna Kea Access Road at Puʻu Huluhulu. The first six miles of Mauna Kea Access Road from Saddle Road to Halepōhaku is paved and 20-feet-wide. The next approximate 4.5 miles of Mauna Kea Access Road is unpaved until an elevation of 11,800 feet above msl where it becomes paved again. It is recommended, although not required, that visitors to the summit use a four-wheel drive vehicle beyond Halepōhaku.

Existing buildings/structures:

Existing buildings/structures in Area A of the project site include the Observatory Building and the Generator Building, which will be demolished as part of the project. Existing buildings/structures in Area B of the project site include the United Kingdom InfraRed Telescope (UKIRT) Observatory and the Utility Building/Lunchroom.

Existing utilities (electrical, communication, gas, drainage, water & wastewater):

Exiting utilities include electrical and telecommunication. There are no gas, water, or wastewater facilities at the summit of Maunakea.

Physiography (geology, topography, & soils):

The existing Hōkū Keʻa Observatory and Generator Building are located along a paved access road on the way to the UKIRT Observatory Building. Materials exposed at the ground surface of the project site generally consist of cinder mixed with some volcanic ash. Based on laboratory tests, the surface materials generally consist of medium dense gravelly sands with little silt. In some areas, the surface materials are mostly gravel with very little sands and silts. Surface materials are generally dry with relatively low moisture content. There is little or no soil development, and the ground surface has the appearance of a desert pavement. It is expected that subsurface conditions are similar to the materials observed at the ground surface.

The unpaved ground surface around the Observatory Building and Generator Building generally follows the grades of Mauna Kea Access Road and is slightly sloping down from northeast to southwest. The existing ground surface elevations at the project site range from 13,725 to 13,740 feet above mean sea level (msl).

Hydrology (surface water, groundwater, coastal waters, & wetlands):

There are no perennial streams in the MKSR. The only surface water regularly present in the summit region is Lake Waiʻau, which is located approximately 0.9-mile southwest of the project site.

The project site is underlain by the Waimea Aquifer System. This is a “high-level” aquifer, which means that it is entirely fresh water, and has an estimated yield of 16 million gallons per day. The depth to groundwater at the summit is unknown, but the Humuʻula Groundwater Research Project, or Pohakuloa Training Area Project, aimed to research the groundwater resources in the “Saddle” region between Mauna Loa and Maunakea volcanoes by drilling two test holes on Army Garrison

Hawai‘i land. Results included the discovery of groundwater at a much shallower depth than expected and a dike-impounded aquifer. Perched groundwater was identified at two depth intervals: 500 to 540 feet below ground surface (bgs) and 700 to 1,181 feet bgs. The regional water table was encountered at 1,806 bgs, or about 4,500 feet above msl (HGGRC, 2018).

The project site is located at the summit of Maunakea and is not near coastal waters, nor does it contain any wetlands.

Flora & fauna (indicate if rare or endangered plants and/or animals are present):

The summit of Mauna Kea is located in the alpine stone desert ecosystem. In this ecosystem, there is little or no soil development, and the ground surface has the appearance of a desert pavement. The climate is dry and cold. Vegetation at the summit consists of lichens, mosses, and a few species of vascular plants. Fauna consists of arthropods, including the endemic Hawaiian wēkiu bug (Nysius wekiuicola).

The U.S. Fish and Wildlife Service (USFWS) identified the federally endangered Hawaiian hoary bat (Lasiurus cinereus semotus) and the federally endangered Mauna Kea silver sword (Argyroxiphium sandwicense subsp.) as special status species known to occur in the immediate vicinity of the project area. No Hawaiian hoary bats have been documented at the summit of Maunakea, and there is not sufficient habitat for the species at or near the project site. The Mauna Kea silversword occurs on Maunakea at elevations up to 12,500 feet above msl. The project site is above the habitat range of the Mauna Kea silversword.

The USFWS stated that endangered Hawaiian seabirds including the ‘ua‘u/Hawaiian petrel (Pterodroma sandwichensis), ‘ake‘ake/band-rumped storm petrel (Oceanodroma castro), and ‘a‘o/Newell’s shearwater (Puffinus newelli) may transit the area flying to breeding colonies. The ‘ua‘u/Hawaiian petrel has been discovered recently nesting near 10,000 feet elevation on Maunakea.

The palila (Loxiodes bailleui) is a federal and state-listed endangered species that resides in the Mauna Kea Forest Reserve at elevations between 6,000 and 9,000 feet above msl. Critical habitat within the Mauna Kea Forest reserve was designated September 22, 1977 (Federal Register Vol. 42, No. 184; September 22, 1977). Although the project site is not within the designated critical habitat, the Maunakea Access Road traverses through the designated critical habitat area.

Natural hazards (erosion, flooding, tsunami, seismic, etc.):

The project site is located in a relatively flat area that is bordered on the west and east by steep slopes. Due to the low average annual precipitation at the summit, the occurrence of ephemeral streams is limited to winter storms and/or rapid snowmelts. These infrequent runoff occurrences have cut small channels and gullies that connect with larger gulches further down the mountain slope. Given the topography of the project site, as well as the low rainfall, flooding has not been observed and is not expected to occur.

Hawai‘i Island is one of the most seismically active areas on earth. In 2006 an earthquake caused minor damage to the W.M. Keck, Subaru, UH 2.2-meter, and Canada-France-Hawai‘i Telescope observatories. Damage was limited to auxiliary equipment; the telescopes’ mirrors and overall facility structural integrity were not affected. Earthquakes will continue to impact the Maunakea summit area.

Maunakea is a dormant shield volcano that is one of the five volcanoes that comprise the island of Hawai‘i. Maunakea has erupted 12 times within the last 10,000 years with the most recent eruption over 4,600 years ago. The project site is located in an area designated "Low Hazard." Although there

are several post-glacial (post-10,000-year-old) eruptive vents on the middle flanks of Maunakea, there are none younger than 40,000 years old at the summit. Thus, the potential for renewed volcanic activity at the summit of Maunakea is low. Any future volcanic activity would likely occur well below the summit.

Historic & cultural resources:

No above ground historic sites have been recorded within the project area. However, four sites are located within 500 meters of the project site: Site 50-10-23-26224, USGS marker located on the summit of Pu‘u Wekiu; Site 50-10-23-21209, possible burial; Site 50-10-23-21438, Kūkahau‘ula (the summit), a Traditional Cultural Property; and Site 50-10-23-26869, Mauna Kea Summit Region Historic District.

In addition to the four historic sites located within 500 meters of the project site, both the Observatory Building and the Generator Building were built around 1968 and are over 50 years old. However, neither building is evaluated as eligible for the Hawai‘i State Register of Historic Places under any criteria established in HAR 13-275-6(b).

Modern-day oral history consultants have described their knowledge concerning cultural practices in the summit region. These include Ahu and Kūahu, burials and scattering of cremated remains, piko (umbilical cord) deposition in Wai‘au, and navigation and orienteering. Cultural activities are documented by the rangers in their daily observation reports, there is no estimate of the level of use of the summit by cultural practitioners. The three most visited areas are Lake Wai‘au, the Adze Quarry, and Pu‘u Wēkiu. Consultation with cultural practitioners did not identify any previously unknown historic properties, traditional properties, or traditional and customary cultural practices within the project area.

EVALUATION CRITERIA

The Department or Board will evaluate the merits of a proposed land use based upon the following eight criteria (*ref §13-5-30(c))*

1. The purpose of the Conservation District is to conserve, protect, and preserve the important natural and cultural resources of the State through appropriate management and use to promote their long-term sustainability and the public health, safety, and welfare. *(ref §13-5-1)* How is the proposed land use consistent with the purpose of the conservation district?

   The project will remove an existing observatory and associated facilities and restore the site to a basic topography consistent with the area. This will have beneficial impacts to the conservation district through improving the visual environment and the experience for visitors to the summit, including cultural practitioners.

2. How is the proposed use consistent with the objectives of the subzone of the land on which the land use will occur? *(ref §13-5-11 through §13-5-15)*

   The current use of the project site is R-3, Astronomy Facilities. The proposed use will be P-8, Structures and Land Uses, Existing. This includes "demolition, removal, or minor alteration of existing structures, facilities, land, and equipment. Any historic property shall be evaluated by the department for historical significance" (HAR 13-5-22). The Observatory Building and Generator Building are greater than 50 years old. Neither building is evaluated as eligible for the Hawai‘i State Register of Historic Places under any criteria established in HAR 13-275-6(b). A determination letter has been sent to the State Historic Preservation Division for review and concurrence.

3. Describe how the proposed land use complies with the provisions and guidelines contained in chapter 205A, HRS, entitled “Coastal Zone Management” *(see 205A objectives on p. 9).*

   The proposed land use complies with the provisions and guidelines contained in HRS Chapter 205A, Coastal Zone Management, as discussed in Attachment D.

4. Describe how the proposed land use will not cause substantial adverse impact to existing natural resources within the surrounding area, community or region.

   There will be short-term and temporary impacts during deconstruction and site restoration activities that will be less than significant to biological resources, geology and soils, water resources, and air quality. BMPs and other measures would be implemented to minimize impacts, as applicable.

5. Describe how the proposed land use, including buildings, structures and facilities, is compatible with the locality and surrounding areas, appropriate to the physical conditions and capabilities of the specific parcel or parcels.

   The proposed land use is restoration of the site's historical condition prior to construction of the observatory to the extent practicable. The project will restore the site to a basic topography consistent with the area.

6. Describe how the existing physical and environmental aspects of the land, such as

natural beauty and open space characteristics, will be preserved or improved upon.

The project includes removing existing buildings that are located in a visually sensitive environment and restoring the site to a basic topography consistent with the area. The removal of existing unused buildings and restoration of the site would improve the visual character and natural beauty of the area. In addition, the removal of Hōkū Keʻa will open up views to the west from the simmit.

7. If applicable, describe how subdivision of land will not be utilized to increase the intensity of land uses in the Conservation District.

   There will not be subdivision of land as part of the project.

8. Describe how the proposed land use will not be materially detrimental to the public health, safety and welfare.

   The project includes removing existing buildings and restoring the site to a basic topography consistent with the area. In addition, a boulder barrier will be installed along the top of the slope on the west side of the project area to prevent visitors from inadvertently driving down the steep slope. The project will not be materially detrimental to the public health, safety, and welfare.

CULTURAL IMPACTS

Articles IX and XII of the State Constitution, other state laws, and the courts of the State, require government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups.

Please provide the identity and scope of cultural, historical, and natural resources in which traditional and customary native Hawaiian rights are exercised in the area.

A Cultural Impact Assessment (CIA), Cultural Impact Assessment in Support of the Hōkū Keʻa Decommissioning Project, Mauna Kea, Hawaiʻi Island, Hawaiʻi, was prepared for the project by Pacific Consulting Services, Inc. (PCSI) in January 2022 (see Appendix C of the Final EA included as Attachment E to this application).

Cultural practices and beliefs involving Maunakea have been changing since the arrival of the earliest Polynesian settlers, an evolutionary process that continues today. A variety of cultural and religious beliefs and practices pertain to and are occurring on the mountain today. This includes traditional and customary cultural practices and beliefs as well as contemporary cultural practices and beliefs.

Traditional cultural properties (TCP) are defined as properties that are eligible for inclusion in the National Register of Historic Places (NRHP) because of their association with cultural practices or beliefs of a living community that are rooted in the community's history and are important in maintaining the continuing cultural identity of the community. The State Historic Preservation Division (SHPD) of DLNR designated three areas on Maunakea as TCP: Kūkahauʻula (the summit), Puʻu Līlīnoe, and Lake Waiʻau. The project site is located within the Kūkahauʻula TCP.

Modern-day oral history consultants have described their knowledge concerning cultural practices in the summit region. These include Ahu and Kūahu, burials and scattering of cremated remains, piko (umbilical cord) deposition in Waiʻau, and navigation and orienteering. Cultural activities are documented by the rangers in their daily observation reports, there is no estimate of the level of use of the summit by cultural practitioners. The three most visited areas are Lake Waiʻau, the Adze Quarry, and Puʻu Wēkiu. Consultation with cultural practitioners did not identify any previously unknown historic properties, traditional properties, or traditional and customary cultural practices within the project area.

Identify the extent to which those resources, including traditional and customary Native Hawaiian rights, will be affected or impaired by the proposed action.

The project will remove man-made elements from the summit, which will enhance the area for cultural practitioners and open up views to the west from summit regions. During decommissioning and restoration activities, the project site will be fenced, and access will be limited to construction and monitoring personnel for safety reasons. However, access will be maintained to the remaining parts of the summit. It is expected that a maximum of 11 personnel and six vehicles will be accessing the site during decommissioning and restoration activities. The presence of additional personnel, vehicles, and construction equipment will alter the setting of the area. In addition, there will be noise during decommissioning and restoration activities, which will occur during daylight hours. These impacts will be short-term and temporary as decommissioning and restoration activities will be completed in approximately five months. There will be no long-term negative impacts to cultural practices associated with the project. Conversely, the project will have beneficial impacts by removing man-made facilities, thereby enhancing the experience for cultural practitioners. There is no indication that any Native Hawaiian resources or rights would be affected or impaired as a result of

the project.

What feasible action, if any, could be taken by the Board of Land and Natural Resources in regards to your application to reasonably protect Native Hawai'i rights?

The project is not expected to adversely impact traditional or customary Native Hawaiian rights. Therefore, no additional action by the Board of Land and Natural Resources is needed to protect Native Hawaiian rights.

OTHER IMPACTS

Does the proposed land use have an effect (positive/negative) on public access to and along the shoreline or along any public trail?

The project site is at the summit of Maunakea and will have no effect on public access to and along the shoreline. Access to the Mauna Kea Summit Trail is across Mauna Kea Access Road from the project site. The project will not impact trail acess.

Does the proposed use have an effect (positive/negative) on beach processes?

The project site is at the summit of Maunakea and will have no effect on beach process.

Will the proposed use cause increased sedimentation?

There is very little to no soil present at the project site. There is the potential for soils or other fines, such as volcanic ash, in the construction area to be eroded as a result of being carried away by storm water runoff or wind. BMPs will be implemented to minimize the potential for runoff and potential sedimentation from the site to adjacent areas.

Will the proposed use cause any visual impact on any individual or community?

The project will remove man-made elements from the summit, which will enhance the area for cultural practitioners and other visitors to the summit. In addition, the project will open up views to the west from summit regions.

Please describe any sustainable design elements that will be incorporated into the proposed land use (*e.g. the use of efficient ventilation and cooling systems; renewable energy generation; sustainable building materials; permeable paving materials; efficient energy and water systems; efficient waste management systems; etc.).*

The project does not include any sustainable design elements as it will be removing man-made elements from the summit and will not be constructing any new elements.

If the project involves landscaping, please describe how the landscaping is appropriate to the Conservation District (*e.g. use of indigenous and endemic species; xeriscaping in dry areas; minimizing ground disturbance; maintenance or restoration of the canopy; removal of invasive species; habitat preservation and restoration; etc.)*

The project does not include landscaping.

Please describe Best Management Practices that will be used during construction and implementation of the proposed land use.

BMPs and other measures to minimize impacts during deconstruction and restoration activities are provided in Attachment F.

Please describe the measures that will be taken to mitigate the proposed land use's environmental and cultural impacts.

BMPs and other measures to minimize impacts during deconstruction and restoration activities are

provided in Attachment F.

SINGLE FAMILY RESIDENTIAL STANDARDS

Single Family Residences must comply with the standards outlined in HAR Chapter 13-5, Exhibit 4. Please provide preliminary architectural renderings (e.g. building foot print, exterior plan view, elevation drawings; floor plan, etc.) drawn to scale.

SIZE OF LOT

	Existing	Proposed	Total
Proposed building footprint			
Paved areas/ impermeable surfaces			
Landscaped areas			
Unimproved areas			

SETBACKS Front: Side: Back:

SHORELINE PROPERTIES

Average Lot Depth (ALD): Average annual coastal erosion rate:

Minimum shoreline setback based on Exhibit 4:

Actual shoreline setback or proposed structure:

MAXIMUM DEVELOPABLE AREA

The Maximum Developable Area includes all floor areas under roof, including first, second, and third stories, decks, pools, saunas, garage or carport, and other above ground structures.

Maximum Developable Area based on Exhibit 4:

Actual Developable Area of proposed residence:

Actual height of the proposed building envelope as defined in Exhibit 4:

COMPATIBILITY

Provide justification for any propose deviation from the established residential standards.

How is the design of the residence compatible with the surrounding area?

If grading is proposed, include a grading plan which provides the amount of cut and fill. Has grading or contouring been kept to a minimum?

CHAPTER 205A – COASTAL ZONE MANAGEMENT

Land uses are required to comply with the provisions and guidelines contained in Chapter 205A, Hawai'i Revised Statutes (HRS), entitled "Coastal Zone Management," as described below:

- **Recreational resources:** Provide coastal recreational opportunities accessible to the public.
- **Historic resources:** Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.
- **Scenic and open space resources:** Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.
- **Coastal ecosystems:** Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.
- **Economic uses:** Provide public or private facilities and improvements important to the State's economy in suitable locations.
- **Coastal hazards:** Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.
- **Managing development:** Improve the development review process, communication, and public participation in the management of coastal resources and hazards.
- **Public participation:** Stimulate public awareness, education, and participation in coastal management.
- **Beach protection:** Protect beaches for public use and recreation.
- **Marine resources:** Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

CERTIFICATION

I hereby certify that I have read this completed application and that, to the best of my knowledge, the information in this application and all attachments and exhibits is complete and correct. I understand that the failure to provide any requested information or misstatements submitted in support of the application shall be grounds for either refusing to accept this application, for denying the permit, or for suspending or revoking a permit issued on the basis of such misrepresentations, or for seeking of such further relief as may seem proper to the Land Board.

I hereby authorize representatives of the Department of Land and Natural Resources to conduct site inspections on my property. Unless arranged otherwise, these site inspections shall take place between the hours of 8:00 a.m. and 4:30 p.m.

_____

Signature of authorized agent(s) or if no agent, signature of applicant

AUTHORIZATION OF AGENT

I hereby authorize_____to act as my representative and to bind me in all matters concerning this application.

_____

_____

Signature of applicant(s)

ATTACHMENT A
Location Map

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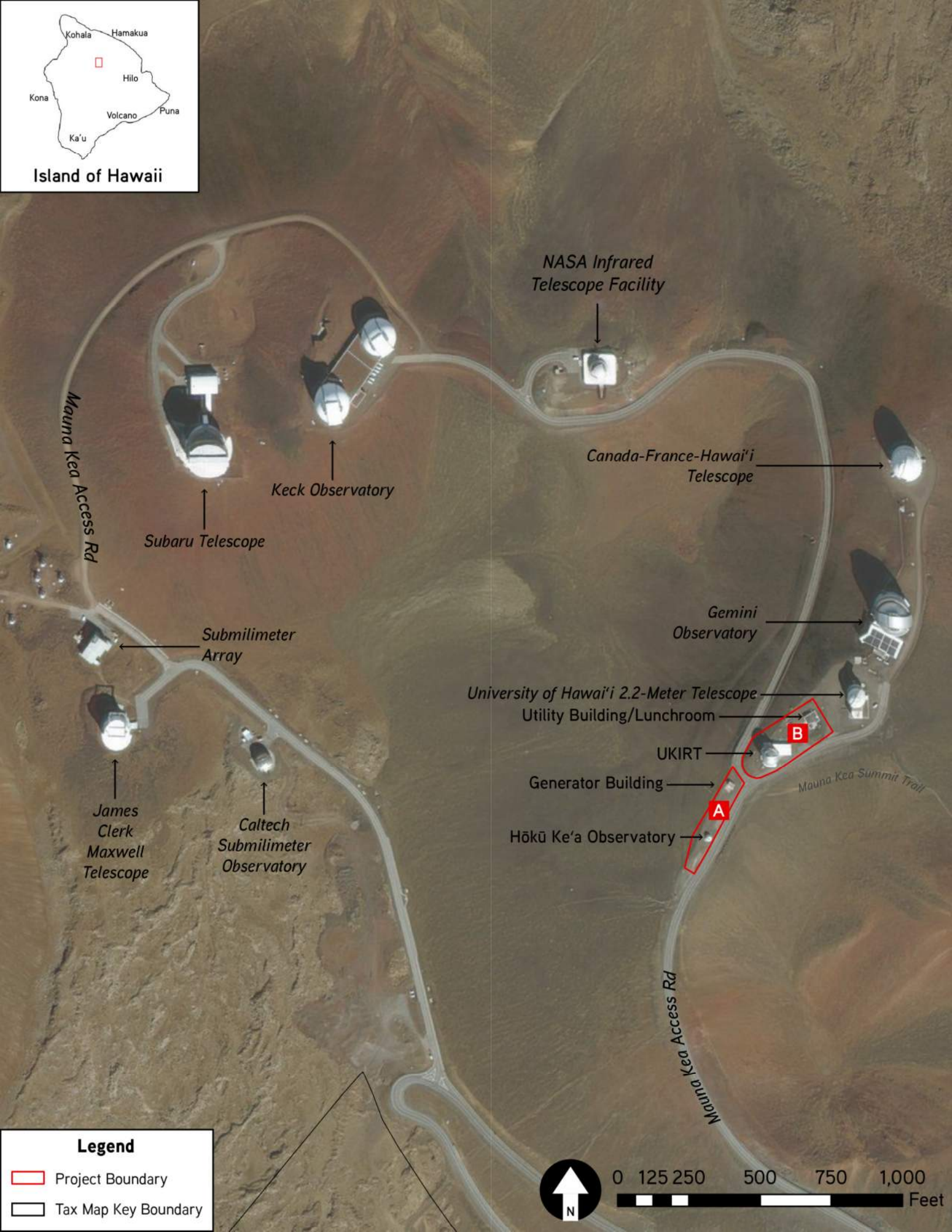
Kohala
Hamakua
Hilo
Kona
Volcano
Puna
Ka'u
Island of Hawaii
NASA Infrared Telescope Facility
Mauna Kea Access Rd
Keck Observatory
Subaru Telescope
Canada-France-Hawai'i Telescope
Gemini Observatory
Submilimeter Array
University of Hawai'i 2.2-Meter Telescope
Utility Building/Lunchroom
B
UKIRT
Generator Building
Mauna Kea Summit Trail
A
Hōkū Ke'a Observatory
James Clerk Maxwell Telescope
Caltech Submilimeter Observatory
Mauna Kea Access Rd
Legend
Project Boundary
Tax Map Key Boundary
N
0 125 250 500 750 1,000
Feet

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ATTACHMENT B
Site Photos

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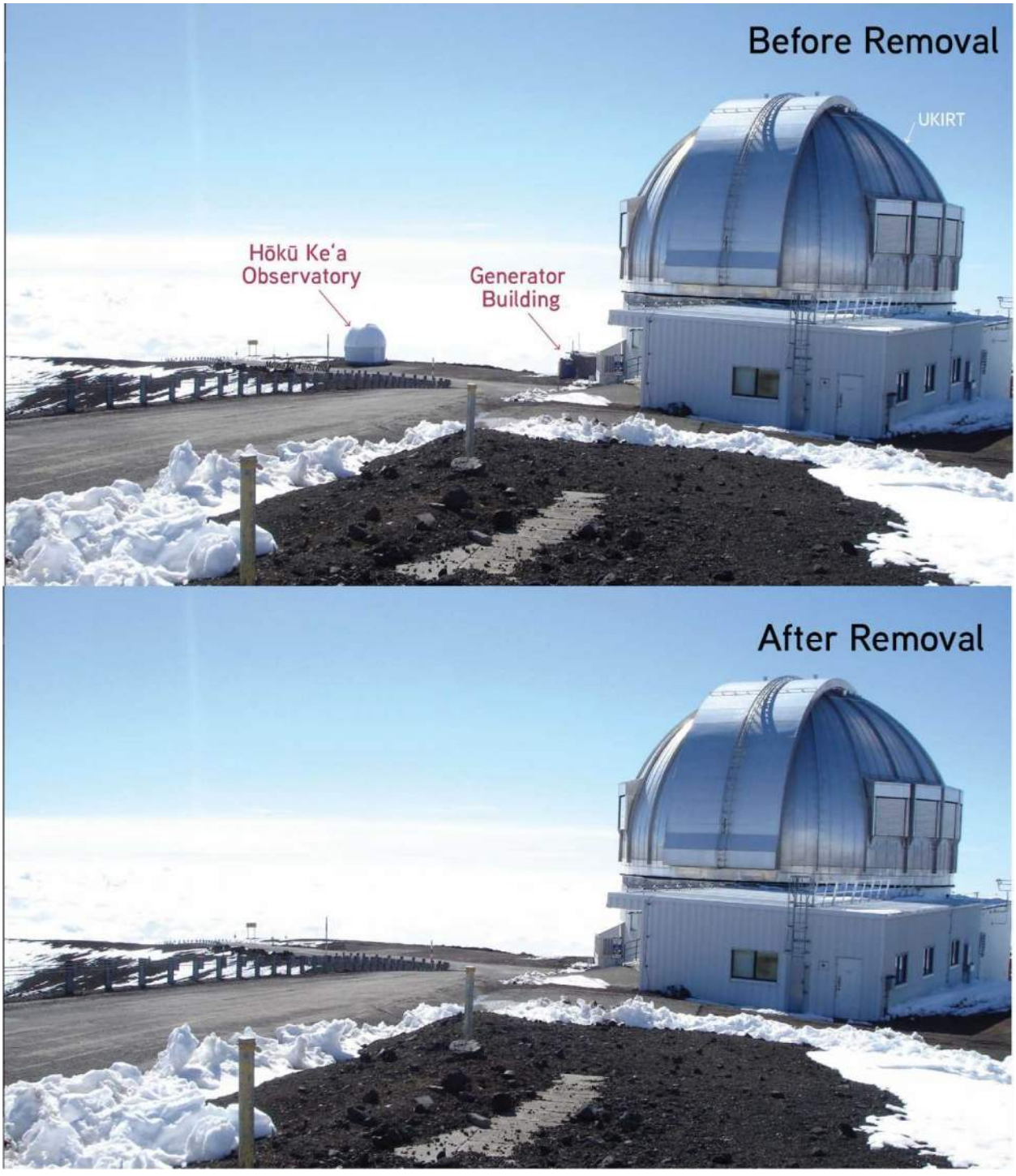
Site Photos

Hōkū Keʻa Observatory Building

Generator Building

Utility Room/Lunchroom



Before and After Simulation

ATTACHMENT C

Deconstruction and Restoration Plans

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UNIVERSITY OF HAWAI`I at HILO

HILO, HAWAI`I

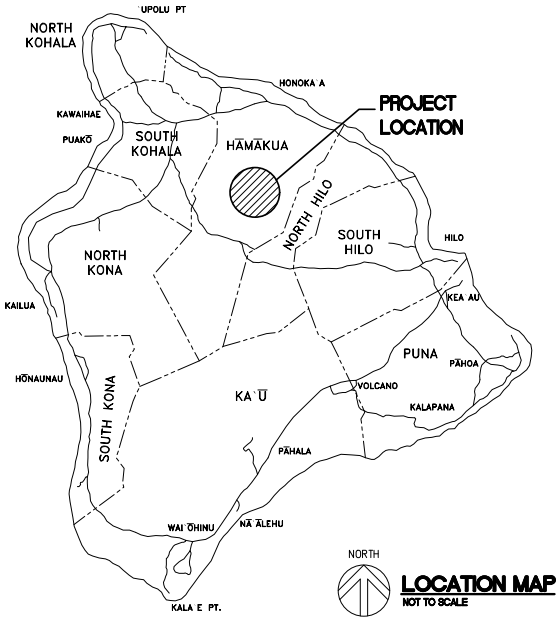
Hōkū Ke`a Decommissioning

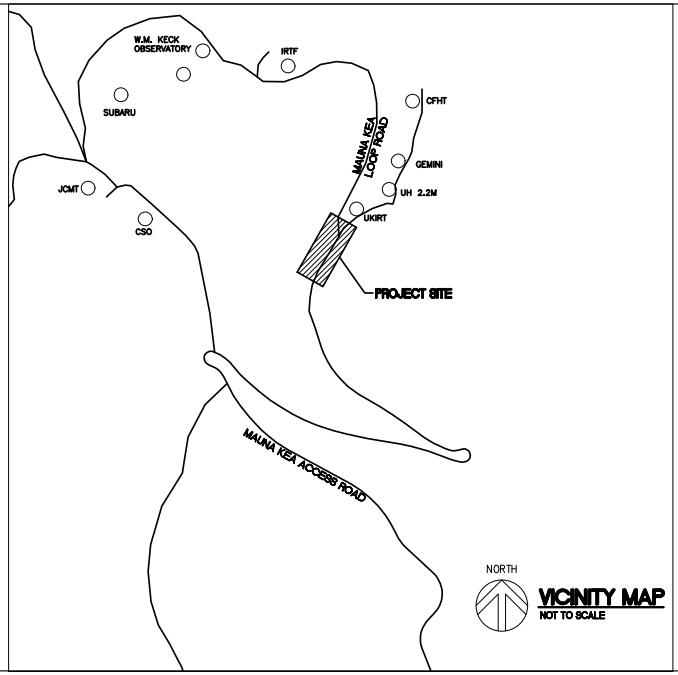
PROJECT NO. UHH-16029

TMK: (3) 4-4-015:009

OWNER:

STATE OF HAWAI`I





PREPARED BY:

PROJECT MANAGER/CIVIL ENGINEER	SSFM INTERNATIONAL, INC. 99 AUPUNI STREET, SUITE 202 HILO, HI 96720
ARCHITECT	FERRARO CHOI AND ASSOCIATES LTD. 1240 ALA MOANA BLVD, SUITE 510 HONOLULU, HI 96814
ELECTRICAL ENGINEER/SURVEYOR	ENGINEERING PARTNERS, INC. 455 E. LANIKAULA STREET HILO, HI 96720

APPROVED BY:

UNIVERSITY OF HAWAI`I
VICE CHANCELLOR OF ADMINISTRATIVE AFFAIRS

DATE

PRE FINAL DESIGN - NOT FOR CONSTRUCTION

PROJECT NO. UHH-16029	SHEET NO. OF	FILE NO.	SHEET T-1

SHEET SIZE: 24" X 36" FILE NAME: C:_CIVIL 3D PROJECTS\2019_180.000 UHH HOKU KEA DECOMMISSIONING\01 CE DWG\T-1 TITLE SHEET.DWG BY: MCORONADO

INDEX OF DRAWINGS

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C-0.2	GENERAL NOTES - 2
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C-2.0	SITE AND GRADING PLAN
C-3.0	CIVIL DETAILS
A-0.0	ABBREVIATIONS, SYMBOLS, GENERAL AND DEMO NOTES
A-0.1	EXISTING SITE PLAN
A-0.2	SITE PLAN
A-1.0	DEMO PLAN, ROOF AND SECTION
A-2.0	DEMO, EXTERIOR ELEVATIONS
A-3.0	DEMO, INTERIOR ELEVATIONS
A-4.0	LUNCHROOM/UTILITY BUILDING PLAN
E-0.0	ELECTRICAL SYMBOLS, IECC, AND ABBREVIATIONS
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E-2.0	DEMOLITION ELECTRICAL PLANS
E-3.0	EXISTING/DEMOLITION SINGLE LINE-LUNCHROOM/UTILITY BUILDING

GENERAL CONSTRUCTION NOTES:

1. THE SCOPE OF WORK OF THIS PROJECT INCLUDES, BUT IS NOT LIMITED TO REMOVAL OF EXISTING HOKU KEA OBSERVATORY AND GENERATOR BUILDING, ITS FOUNDATION AND ALL EXISTING UTILITIES CONNECTED TO THE BUILDINGS, BACKFILL OF THE EXCAVATED AREA, INSTALLATION OF BARRIER AND OTHER RELATED IMPROVEMENTS.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND PROPOSAL, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986, STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED BY DPW, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI AND HAWAII, HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005 EDITION, AND STANDARD PLANS OF THE STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, DATED 2008, UNLESS OTHERWISE SPECIFIED ON THE PLANS OR SPECIFICATIONS.
3. NO WORK SHALL BE PERFORMED ON SATURDAYS, SUNDAYS AND HOLIDAYS ANYTIME WITHOUT PRIOR APPROVAL FROM THE OWNER. WORK DURING NORMAL WORKING HOURS SHALL BE BETWEEN 7:45 A.M. TO 4:30 P.M. OR AS DIRECTED BY THE OWNER.
4. THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREAS FREE FROM DUST NUISANCES. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL RULES OF THE STATE DEPARTMENT OF HEALTH, HAR 11-60.1, FUGITIVE DUST.
5. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN, FROM THE APPROPRIATE COUNTY AND STATE AGENCIES, ALL PERMITS REQUIRED TO COMPLETE THE WORK SHOWN ON THESE PLANS INCLUDING, BUT NOT LIMITED TO, ALL DEMOLITION, CLEARING AND GRUBBING, GRADING, AT NO ADDITIONAL COST TO THE OWNER.
6. THE CONTRACTOR AGREES THAT IT SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OR WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
7. NO BLASTING SHALL BE ALLOWED ON THIS PROJECT.
8. THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS AND/OR SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
9. THE CONTRACTOR SHALL MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS TO EXISTING FACILITIES TO REMAIN AT ALL TIMES AND SHALL SCHEDULE AND PROSECUTE ITS WORK IN SUCH A MANNER TO AVOID INTERRUPTION OF NORMAL ACTIVITIES AT THE EXISTING FACILITIES. THE CONTRACTOR SHALL PROVIDE EARLY NOTIFICATION AND OBTAIN APPROVAL FOR ANY ANTICIPATED INTERRUPTIONS. TEMPORARY SAFE PEDESTRIAN PASSAGEWAYS AROUND OR THROUGH A CONSTRUCTION SITE SHALL COMPLY WITH ADAAG SECTIONS 206.1 AND 402.1.
10. THE CONTRACTOR SHALL MAINTAIN A MINIMUM 36-INCH WIDE ACCESSIBLE ROUTE TO BUILDING ENTRY, FOR BUILDINGS TO REMAIN, UNOBSTRUCTED BY SIGNS, POLES ETC.
11. THE CONTRACTOR SHALL CONTACT HAWAII ONE CALL CENTER AT (866) 423-7287 OR 811 AT LEAST FIVE (5) DAYS PRIOR TO START OF WORK TO HAVE RESPECTIVE UTILITY COMPANIES LOCATE AND MARK WHERE THEIR UNDERGROUND FACILITIES ARE LOCATED. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL WORK WITH AGENCIES AND UTILITY COMPANIES. ALL UTILITY WORK WITH UNDERGROUND INSTALLATIONS MUST BE COMPLETED PRIOR TO PAVING WORK BEING DONE ABOVE THEM.
12. THE EXISTENCE AND LOCATION OF OVERHEAD AND UNDERGROUND UTILITIES, MANHOLES, MONUMENTS AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA, BUT THE ACCURACY IS NOT GUARANTEED. THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF WORK IS POSSIBLE. THE CONTRACTOR SHALL TONE FOR THE EXACT LOCATIONS AND DEPTHS OF ALL UNDERGROUND FACILITIES, EITHER SHOWN ON OR OMITTED FROM THE PLANS, IN AREAS WHERE WORK, SUCH AS THE PLACEMENT OF NEW UNDERGROUND OR ABOVEGROUND UTILITY AND INFRASTRUCTURE, SIGN POSTS, ETC. MAY AFFECT THESE PROPERTIES. TONING SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS CONTRACT ITEMS AND WILL NOT BE PAID FOR SEPARATELY.
13. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND FACILITIES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT WITHIN OR UNDER OVERHEAD FACILITIES. THE CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGES INCURRED TO THE EXISTING FACILITIES AND/OR IMPROVEMENTS AS A RESULT OF ITS OPERATIONS. ANY DAMAGE INFLICTED ON EXISTING UTILITY LINES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR RESTORED AS DIRECTED BY THE OWNER AND/OR ENGINEER AND APPROVED BY THE UTILITY AT THE CONTRACTOR'S EXPENSE.
14. WHEN TRENCH EXCAVATION IS ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS, OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS.
15. WHEN EXCAVATING NEAR UTILITY POLES, THE CONTRACTOR SHALL PROTECT, SUPPORT, SECURE AND TAKE ALL OTHER PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF THESE POLES. THE CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED TO REPAIR AND/OR STRAIGHTEN THESE POLES.
16. WHENEVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS, DEPTHS AND ASSURE THAT CONNECTIONS CAN BE MADE PRIOR TO EXCAVATION FOR THE NEW LINES AT NO COST TO THE OWNER. THE DEPTHS OF THE EXISTING UTILITIES MAY BE SHALLOW. ANY NECESSARY ADJUSTMENTS FOR THE NEW LINES TO ENSURE PROPER CONNECTION TO THE EXISTING, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. HELCO/HTC/CABLE LINES ARE EITHER DIRECT BURY OR CONCRETE JACKETED.
17. EXISTING UTILITIES, FOR BUILDINGS TO REMAIN, SHALL REMAIN IN SERVICE DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION OF WORK WITHIN THE SCOPE, AND WORK DONE BY OTHERS.
18. THE ENGINEER RESERVES THE RIGHT TO MAKE CHANGES TO THE DRAINAGE SYSTEM AS SUCH CHANGES ARE FOUND TO BE NECESSARY.
19. THE CONTRACTOR SHALL PROVIDE A SMOOTH-RIDING CONNECTION TO EXISTING STREETS, DRIVEWAYS, WALKWAYS AND AT TRENCHING LOCATIONS AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE INCIDENTAL TO ASPHALT CONCRETE PAVEMENT IF APPLICABLE.
20. EXISTING PAVEMENT SHALL BE BROOMED OFF AND SHALL RECEIVE A TACK COAT OF 0.15 GALLON PER SQUARE YARD OF EMULSIFIED ASPHALT (SS-1) BEFORE PLACING AC PAVEMENT. THE COST OF THE TACK COAT SHALL BE INCIDENTAL TO THE AC PAVEMENT.
21. ALL CONSTRUCTION LINES, GRADES AND SURVEY MONUMENT STAKEOUTS SHALL BE MADE BY LICENSED SURVEYORS.
22. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION OR BETTER, ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION INCLUDING BUT NOT LIMITED TO, PAVEMENTS, PAVEMENT MARKINGS, EMBANKMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, WALLS, FENCES, ETC. UNLESS OTHERWISE NOTED IN THE PLANS. DEMOLITION AND RESTORATION OF EXISTING ITEMS SHALL BE INCIDENTAL.
23. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO ON THE CONTRACT DOCUMENT, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
24. THE CONTRACTOR SHALL CONDUCT ALL TESTS AS REQUIRED BY THE CONTRACT OR AS REQUIRED BY THE ENGINEER AND BE RESPONSIBLE FOR ALL EXPENSES INCURRED IN CONDUCTING THESE TESTS.
25. INSPECTIONS ARE PERFORMED FOR THE EXCLUSIVE BENEFIT OF THE OWNER. THE INSPECTION OF OR THE FAILURE TO INSPECT THE WORK SHALL NOT RELIEVE THE CONTRACTOR OF OBLIGATIONS TO FULFILL THE CONTRACT AS PRESCRIBED, TO CORRECT DEFECTIVE WORK, AND TO REPLACE UNSUITABLE OR REJECTED MATERIALS REGARDLESS OF WHETHER PAYMENT FOR SUCH WORK HAS BEEN MADE.
26. FAILURE OF AN INSPECTOR AT ANY TIME TO REJECT NON-CONFORMING WORK SHALL NOT BE CONSIDERED A WAIVER OF THE OWNER'S RIGHT TO REQUIRE WORK IN STRICT CONFORMITY WITH THE CONTRACT DOCUMENTS AS A CONDITION OF FINAL ACCEPTANCE.
27. EXISTING TOPOGRAPHIC SURVEY WAS CONDUCTED ON MAY 2021 BY ENGINEERING PARTNERS, INC. UNDERGROUND UTILITIES SHOWN ARE FOR INFORMATION ONLY. NO GUARANTEE IS MADE ON THE ACCURACY AND COMPLETENESS OF THE INFORMATION. THE CONTRACTOR MUST VERIFY THE INFORMATION SHOWN IS ACCURATE PRIOR TO CONSTRUCTION.
28. FOR BENCHMARKS, SEE SHEETS C-1.0 AND C-2.0.
29. FOR HAZARDOUS MATERIAL REPORT, SEE SPECIFICATION SECTION 01715 EXISTING CONDITIONS - ASBESTOS/LEAD/ HAZARDOUS MATERIALS SURVEY, BY MYOUNGHEE NOH & ASSOCIATES, SEPTEMBER 22, 2020.
30. ALL EQUIPMENT STAGING, ETC. MUST BE DONE WITHIN THE PROJECT LIMITS ONLY. SEE SHEET C-1.0.

GRADING NOTES:

1. ALL WORK SHALL CONFORM TO CHAPTER 10 OF THE HAWAII COUNTY CODE. SHOULD A GRADING PERMIT BE REQUIRED, NO WORK SHALL COMMENCE UNTIL THE DEPARTMENT OF PUBLIC WORKS (DPW) APPROVES A GRADING PERMIT.
2. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS RESULTING FROM ITS WORK. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE OWNER SHALL BE PAYABLE BY THE CONTRACTOR.
3. THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREAS FREE FROM DUST NUISANCES. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL RULES OF THE STATE DEPARTMENT OF HEALTH, HAR 11-60.1, FUGITIVE DUST.
4. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 55, WATER POLLUTION CONTROL AND CHAPTER 54, WATER QUALITY STANDARDS, AND TO THE EROSION AND SEDIMENTATION CONTROL STANDARDS AND GUIDELINES OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII.
5. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
6. THE CONTRACTOR SHALL INFORM THE DPW OF THE LOCATION OF THE DISPOSAL AND/OR BORROW SITE(S) REQUIRED FOR THIS PROJECT WHEN AN APPLICATION FOR A GRADING PERMIT IS MADE. THE DISPOSAL AND/OR BORROW SITE(S) MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE. DISPOSAL AND/OR BORROW SITES SHALL BE MKSS STOCKPILES UNLESS OTHERWISE APPROVED BY THE OWNER.
7. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS ANYTIME WITHOUT PRIOR APPROVAL FROM THE DPW. GRADING WORK ON NORMAL WORKING HOURS SHALL BE BETWEEN 7:45 A.M. TO 3:30 P.M. OR AS DIRECTED BY THE OWNER.
8. FILLS SHALL BE COMPACTED TO 90 PERCENT (90%) OF MAXIMUM DENSITY PER ASTM D-1557 TEST.
9. THE CONTRACTOR SHALL REMOVE ALL VEGETATION BEFORE PLACING FILLS ON NATURAL GROUND SURFACE.
10. ALL GRADING AND SUBGRADE PREPARATION SHALL BE AS RECOMMENDED IN GEOTECH REPORT

REVISION NO.	SYMBOL	DESCRIPTION	SHT.__ OF__	DATE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

DRAWING INDEX AND GENERAL NOTES - 1

SSFM INTERNATIONAL, INC.

DESIGNED BY: RRJ	CHECKED BY:	PROJECT NO. UHH-16029	SHEET C-0.1
DRAWN BY: MGC	APPROVED BY:	DATE AUG 2021	OF ..... SHTS
SCALE: AS NOTED			

APRIL 28, 2022
SIGNATURE EXPIRATION DATE OF LICENSE

SHEET SIZE: 24" X 36" FILE NAME: W:_CIVIL 3D PROJECTS\2019_180.000 UHH HOKU KEA DECOMMISSIONING\01 CE DWGS\C-01_02 GEN NOTES.DWG BY: MCORONADO

NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY:

1. THE CONTRACTOR SHALL OBTAIN A PERMIT TO PERFORM WORK UPON STATE HIGHWAYS FROM THE HAWAII DISTRICT ENGINEER, STATE HIGHWAYS, AT 50 MAKAALA STREET, PRIOR TO COMMENCEMENT OF WORK WITHIN THE STATE'S HIGHWAY RIGHT-OF-WAY.

2. CONSTRUCTION AND RESTORATION OF ALL EXISTING HIGHWAY FACILITIES WITHIN THE STATE'S RIGHT-OF-WAY, INCLUDING THE LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC, SHALL BE IN ACCORDANCE WITH THE CURRENT HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION, AND THE SPECIFICATIONS FOR INSTALLATION OF MISCELLANEOUS IMPROVEMENTS WITHIN STATE HIGHWAYS, OF THE STATE HIGHWAYS DIVISION.

3. WORK MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:30 A.M. AND 3:00 P.M., MONDAY THROUGH FRIDAY, EXCEPT STATE HOLIDAYS, AND DEPARTMENT OF TRANSPORTATION FURLOUGH DAYS, UNLESS WHEN OTHERWISE APPROVED IN WRITING BY THE DIRECTOR OF THE DEPARTMENT OF TRANSPORTATION.

   DURING WORK HOURS, ONLY ONE LANE OF TRAFFIC SHALL BE CLOSED, UNLESS OTHERWISE APPROVED IN WRITING BY THE DISTRICT ENGINEER.

   AT CERTAIN LOCATIONS, "NO LANE CLOSURE" WILL BE ALLOWED DURING THE "BACK TO SCHOOL JAM", THANKSGIVING WEEKEND, CHRISTMAS/NEW YEAR PERIOD AND AT OTHER TIMES AS DIRECTED BY THE HIGHWAYS DIVISION.

4. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES, AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE, AND SAFETY OF PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH THE "ADMINISTRATIVE RULES OF HAWAII GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS," ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, PART VI – TEMPORARY TRAFFIC CONTROL", AND AASHTO "MANUAL FOR ASSESSING SAFETY HARDWARE," 2016 EDITION.

   IF LANE CLOSURES ARE REQUIRED DURING CONSTRUCTION, A TRAFFIC CONTROL PLAN SHALL BE INCORPORATED INTO THE CONSTRUCTION PLANS AND MUST BE APPROVED BY THE DIVISION PRIOR TO THE ISSUANCE OF THE PERMIT.

5. THE MINIMUM PAVEMENT STRUCTURE SHALL CONSIST OF:

   A. RESIDENTIAL DRIVEWAYS, ON MINOR HIGHWAYS:

      (1) 2 1/2" ASPHALT CONCRETE (MIX IV), 6" AGGREGATE BASE COURSE AND 12" SUBBASE, OR 2 1/2" ASPHALT CONCRETE AND 6" ASPHALT CONCRETE BASE COURSE

      (2) 6" OF CLASS "A" CONCRETE REINFORCED WITH 6"x 6"-W2.9x W2.9 WIRE MESH ON 12" AGGREGATE SUBBASE, IF DEEMED NECESSARY BY THE ENGINEER.

   B. COMMERCIAL DRIVEWAYS AND SIDEROADS ON MINOR HIGHWAYS:

      (1) 2 1/2" ASPHALT CONCRETE (MIX IV), 6" ASPHALT CONCRETE BASE COURSE AND 12" SUBBASE, OR 4" ASPHALT CONCRETE (MIX IV) AND 8" ASPHALT CONCRETE BASE COURSE

      (2) 8" OF CLASS "A" CONCRETE REINFORCED WITH 6"x 6" – W2.9 X W2.9 WIRE MESH ON 12" AGGREGATE SUBBASE, IF DEEMED NECESSARY BY THE ENGINEER.

   C. CHANNELIZED INTERSECTIONS ON MAJOR HIGHWAYS:

      4" ASPHALT CONCRETE (MIX IV), 8" ASPHALT CONCRETE BASE COURSE AND 12" AGGREGATE SUBBASE, OR 4" ASPHALT CONCRETE (MIX IV) AND 12" ASPHALT CONCRETE BASE COURSE.

6. THE CONTRACTOR SHALL EXERCISE CARE TO MINIMIZE DAMAGES TO EXISTING HIGHWAY IMPROVEMENTS. ALL DAMAGES SHALL BE REPAIRED BY THE CONTRACTOR, AT ITS EXPENSE, TO THE SATISFACTION OF THE DISTRICT ENGINEER.

7. APPROVAL OF PERMIT CONSTRUCTION PLANS SHALL BE VALID FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF NOTIFICATION OF APPROVAL TO THE APPLICANT. IN THE EVENT CONSTRUCTION DOES NOT COMMENCE WITHIN THIS ONE-YEAR PERIOD, THE APPLICANT WILL BE REQUIRED TO RESUBMIT THE CONSTRUCTION PLANS FOR THE DIVISION'S REVIEW AND RE-APPROVAL.

8. THE CONTRACTOR SHALL INFORM THE STATE HIGHWAYS' PERMIT OFFICE (933-8866) AT LEAST TWO (2) DAYS PRIOR TO CLOSING ANY LANES.

9. WHERE PEDESTRIAN WALKWAYS EXIST THEY SHALL BE MAINTAINED IN A SAFE AND PASSABLE CONDITION, OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGES BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED. ALL WALKWAYS SHALL CONFORM TO ADA REQUIREMENTS.

10. THE PERMIT TO PERFORM WORK UPON STATE HIGHWAY MAY BE REVOKED BECAUSE OF DEFAULT IN ANY OF THE FOLLOWING, BUT NOT LIMITED TO, CONDITIONS:

    A. WORK PERFORMED BEFORE OR AFTER PERMITTED HOURS.
    B. FAILURE TO MAINTAIN ROADWAY SURFACES IN A SMOOTH AND SAFE CONDITION.
    C. FAILURE TO CLEAN UP CONSTRUCTION DEBRIS GENERATED FROM PROJECT WORK.
    D. FAILURE TO PROVIDE PROPER TRAFFIC CONTROL.
    E. FAILURE TO REPLACE DAMAGED PAVEMENT MARKINGS AND SIGNS.

23. TEMPORARY COLD MIX TRENCH PATCHES WILL BE PERMITTED IN ANY GIVEN AREA FOR A MAXIMUM DURATION OF TWO WEEKS, AND SHALL BE A MINIMUM OF 2 INCHES THICK. ALL TEMPORARY PATCHES SHALL BE PLACED OVER PROPERLY PLACED AND COMPACTED BACKFILL AND BASE COURSE LAYERS. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL TEMPORARY PATCHES AND TO MAKE REPAIRS TO UNSATISFACTORY PATCHES WITHIN 24 HOURS.

24. THE CONTRACTOR WILL MAKE EVERY EFFORT TO MINIMIZE THE USE AND THE DURATION OF USE OF STEEL PLATES. ALL STEEL PLATES SHALL HAVE A NON-SKID SURFACE. THE STATE MAY REQUIRE THE BACKFILLING AND PATCHES OF TRENCHES DUE TO THE EXCESSIVE USAGE OF STEEL PLATES.

25. THE CONTRACTOR SHALL PROVIDE THE DISTRICT ENGINEER WITH AS-BUILT PLANS UPON COMPLETION OF THE WORK DONE IN THE STATE RIGHT-OF-WAY. THIS SHALL BE DONE PRIOR TO THE DEPARTMENT'S RELEASE OF THE PERFORMANCE BOND.

EROSION CONTROL AND BEST MANAGEMENT PRACTICES (BMPs) NOTES:

1. CONTRACTOR TO CONFORM TO THE EROSION AND SEDIMENTATION CONTROL STANDARDS AND GUIDELINES ESTABLISHED BY THE DEPARTMENT OF PUBLIC WORKS IN CONFORMITY WITH CHAPTER 180C, HAWAII REVISED STATUTES.

2. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY CLEARING AND GRUBBING WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.

3. CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF CLEARED SURFACE AREA.

4. ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY.

5. CONSTRUCT FACILITIES TO RETAIN ON-SITE WASTEWATER SUCH AS WATER FOR DUST CONTROL AND CONSTRUCTION EXIT WASH WATER AND PERCOLATE INTO THE SOIL. WASH WATER AFTER CLEANING CONCRETE TRUCKS SHALL BE CONTAINED IN A SEPARATE WASH AREA LINED WITH AN IMPERMEABLE LAYER AND NOT ALLOWED TO OVERFLOW. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND SIZE OF WASH AREA.

6. PROVIDE CONSTRUCTION ENTRANCE FOR EACH INGRESS AND EGRESS.

7. MAINTAIN SEDIMENT TRAPS AT DISCHARGE POINTS DURING SITE WORK AND UNTIL PERMANENT EROSION CONTROLS ARE IN PLACE.

8. INSTALL SEDIMENT BASIN ON A WEEKLY BASIS. REMOVE SEDIMENT AND DEBRIS AS DIRECTED BY THE ENGINEER.

9. PRE-CONSTRUCTION GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN TWENTY (20) CALENDAR DAYS PRIOR TO SITE DISTURBANCE.

10. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN THIRTY (30) CALENDAR DAYS, IF NEEDED OR REQUIRED BY THE DIRECTOR OF PUBLIC WORKS.

11. PERMANENT SOIL STABILIZATION WITH NATIVE MATERIAL SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING AND GRUBBING.

12. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING APPROPRIATE CONTROL MEASURES AS PRACTICAL.

13. EROSION CONTROL MEASURES SHOWN HEREON REPRESENT THE MINIMUM REQUIREMENTS. CONTRACTOR SHALL ADJUST EROSION CONTROL MEASURES TO PROVIDE BEST MANAGEMENT PRACTICES TO ADDRESS REQUIREMENTS OF HAR 11-54 AS NEEDED AND AS CONSTRUCTION PHASING AND SEQUENCING REQUIRES. ANY REVISIONS AND/OR CHANGES AS A RESULT OF THESE CONDITIONS SHALL REQUIRE REVIEW AND APPROVAL BY THE CONSTRUCTION MANAGER, STATE AND COUNTY AGENCIES.

14. THE CONTRACTOR SHALL MAINTAIN ALL TEMPORARY BMP MEASURES UNTIL THE ENTIRE AREA IS COMPLETELY STABILIZED. ALL BMP MEASURES SHALL BE REMOVED IMMEDIATELY, AFTER THE AREA IS COMPLETELY STABILIZED.

15. INSPECT BMPS AND SITE WEEKLY. MAINTAIN BMPS AND SITE AS REQUIRED TO ENSURE CONTINUED PERFORMANCE.

TOPOGRAPHIC SURVEY NOTES:

1. TOPOGRAPHIC SURVEY PERFORMED ON THE GROUND MAY 2021.

2. THIS IS NOT A BOUNDARY SURVEY. RESOLVING BOUNDARY OR DEFINING ENCROACHMENTS IF ANY IS BEYOND THE SCOPE OF THIS TOPOGRAPHIC SURVEY.

3. ELEVATIONS ARE BASED ON U.S.G.S. (N.G.S. PID-TU2314) SURVEY STATION "SUMMIT 1955" WITH A PUBLISHED ELEVATION OF 13,803.45'. DATUM OF L.M.S.L.

4. CONTOUR INTERVALS EQUAL TWO FEET WITH TEN FOOT INDEX CONTOURS.

5. AZIMUTHS ARE SHOWN FOR REFERENCE ONLY BEING BASED ON TRUE NORTH AND MEASURED CLOCKWISE FROM TRUE SOUTH AND BEING REFERRED TO HAWAII STATE PLANE ZONE 1 (5101) DATUM NAD 83.

6. R/W LINE ACCESS CONTROL BASED ON H.D.O.T. PLAN, PROFILE AND GRADING MAIN ACCESS ROAD MAUNA KEA OBSERVATORY ACCESS ROAD PHASE 1 PROJECT NO. HWY.-H-01-86, SHEET NO.1 OF 16 SHEETS.

DEMOLITION NOTES:

1. ALL EXISTING FENCES, GUARDRAILS, AC CURBS AND OTHER SAFETY DEVICES SUCH AS SIGNS, SIGNALS, AND DELINEATORS SHALL REMAIN IN PLACE AND REMAIN EFFECTIVE FOR AS LONG AS POSSIBLE BEFORE REMOVAL BECOMES NECESSARY.

2. ALL DRIVEWAYS SHALL REMAIN ACCESSIBLE. ANY DISRUPTION DUE TO DRIVEWAY WORK SHALL BE COORDINATED WITH OWNERS.

3. PROTECT EXISTING UTILITIES, ESPECIALLY WHERE AC PAVEMENT STRUCTURE IS BEING REMOVED TO NEW PAVEMENT SUBGRADE (INCIDENTAL).

4. THE EARTHWORK QUANTITIES FOR THE AC PAVEMENT REMOVAL WILL BE INCLUDED AS INCIDENTAL TO THE VARIOUS OTHER CONTRACT ITEMS.

5. ALL REMOVAL WORK SHALL INCLUDE DISPOSAL OFF-SITE OR DELIVERY OF RECYCLABLE MATERIALS TO THE APPROPRIATE RECYCLING FACILITY BY THE CONTRACTOR IN ACCORDANCE WITH ALL APPROPRIATE REGULATIONS. DISPOSAL SHALL BE CONSIDERED INCIDENTAL TO REMOVAL COSTS AND SHALL NOT BE PAID FOR SEPARATELY.

6. PAYMENT FOR CLEARING AND GRUBBING IS INCIDENTAL TO THE WORK AND SHALL NOT BE PAID FOR SEPARATELY.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING EXISTING DRAINAGE PATTERNS DURING CONSTRUCTION.

8. ANY ELECTRICAL SERVICE TO THE BUILDING TO BE DEMOLISHED SHALL BE DISCONNECTED FROM ITS SOURCE AND ASSOCIATED WIRING BETWEEN SOURCE AND BUILDING SHALL BE REMOVED.

SOLID WASTE CONSTRUCTION NOTES:

1. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER HANDLING, STORAGE AND/OR DISPOSAL OF ALL WASTE GENERATED BY THIS CONSTRUCTION INCLUDING GRUBBING AND EXCESS EXCAVATED MATERIAL. ANY MATERIAL BROUGHT TO THE COUNTY LANDFILLS WILL BE SUBJECTED TO THE INSTITUTED TIPPING FEE SYSTEM, WITH NO EXCEPTIONS OR EXEMPTIONS.

2. ALL WASTES GENERATED BY CONSTRUCTION, INCLUDING GRUBBING, DEMOLITION AND EXCESS EXCAVATION MATERIAL MAY BE BROUGHT TO THE WEST HAWAII SANITARY LANDFILL. THE CONTRACTOR SHALL VERIFY CURRENT LANDFILL FEE WITH THE COUNTY OF HAWAII SOLID WASTE DIVISION. THE NECESSARY LANDFILL FEE SHALL BE INCLUDED IN THE CONTRACTOR'S BID SUM.

3. CONSTRUCTION, DEMOLITION AND GRUBBING MATERIAL SHALL NOT BE DEPOSITED AT ANY OF THE COUNTY TRANSFER STATIONS BUT SHALL BE TRANSPORTED FOR DISPOSAL TO THE WEST HAWAII SANITARY LANDFILL.

4. CHIP GRUBBED MATERIAL BEFORE BRINGING TO THE COUNTY LANDFILL IN ACCORDANCE WITH REGULATIONS OF THE SOLID WASTE DIVISION, DEM.

5. FOR HAZMAT HANDLING AND DISPOSAL SEE SPECIFICATION SECTIONS 13282 AND 13288.

ABBREVIATIONS:

AC	ASPHALT CONCRETE
ADAAG	AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
BMPs	BEST MANAGEMENT PRACTICES
BLDG	BUILDING
BW	BOTTOM OF WALL
CMU	CONCRETE MASONRY UNIT
CO	COMPANY
CONC	CONCRETE
COTG	CLEAN OUT TO GRADE
CRM	CEMENT RUBBLE MASONRY
DET	DETAIL
DPW	DEPARTMENT OF PUBLIC WORKS
DWG	DRAWING
E	EAST
ELEC	ELECTRICAL
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
EPA	ENVIRONMENTAL PROTECTION AGENCY
EXST	EXISTING
FFE	FINISH FLOOR ELEVATION
FT	FEET
HAR	HAWAII ADMINISTRATIVE RULES
HDOT	HAWAII DEPARTMENT OF TRANSPORTATION
HWY	HIGHWAY
IN	INCH
INC	INCORPORATED
LMSL	LOCAL MEAN SEA LEVEL
MAX	MAXIMUM
MIN	MINIMUM
MKSS	MAUNA KEA SUPPORT SERVICES
N	NORTH
NAD	NORTH AMERICAN DATUM
NO	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER
PT	POINT
PVMT	PAVEMENT
R/W	RIGHT-OF-WAY
RD	ROAD
REQ'D	REQUIRED
SHT	SHEET
SPEC	SPECIFICATIONS
STD	STANDARD
TBM	TEMPORARY BENCH MARK
TMK	TAX MAP KEY
TW	TOP OF WALL
TYP	TYPICAL
USGS	UNITED STATES GEOLOGICAL SURVEY
W/	WITH
W/O	WITHOUT

REVISION NO.	SYMBOL	DESCRIPTION	SHT.__ OF__	DATE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

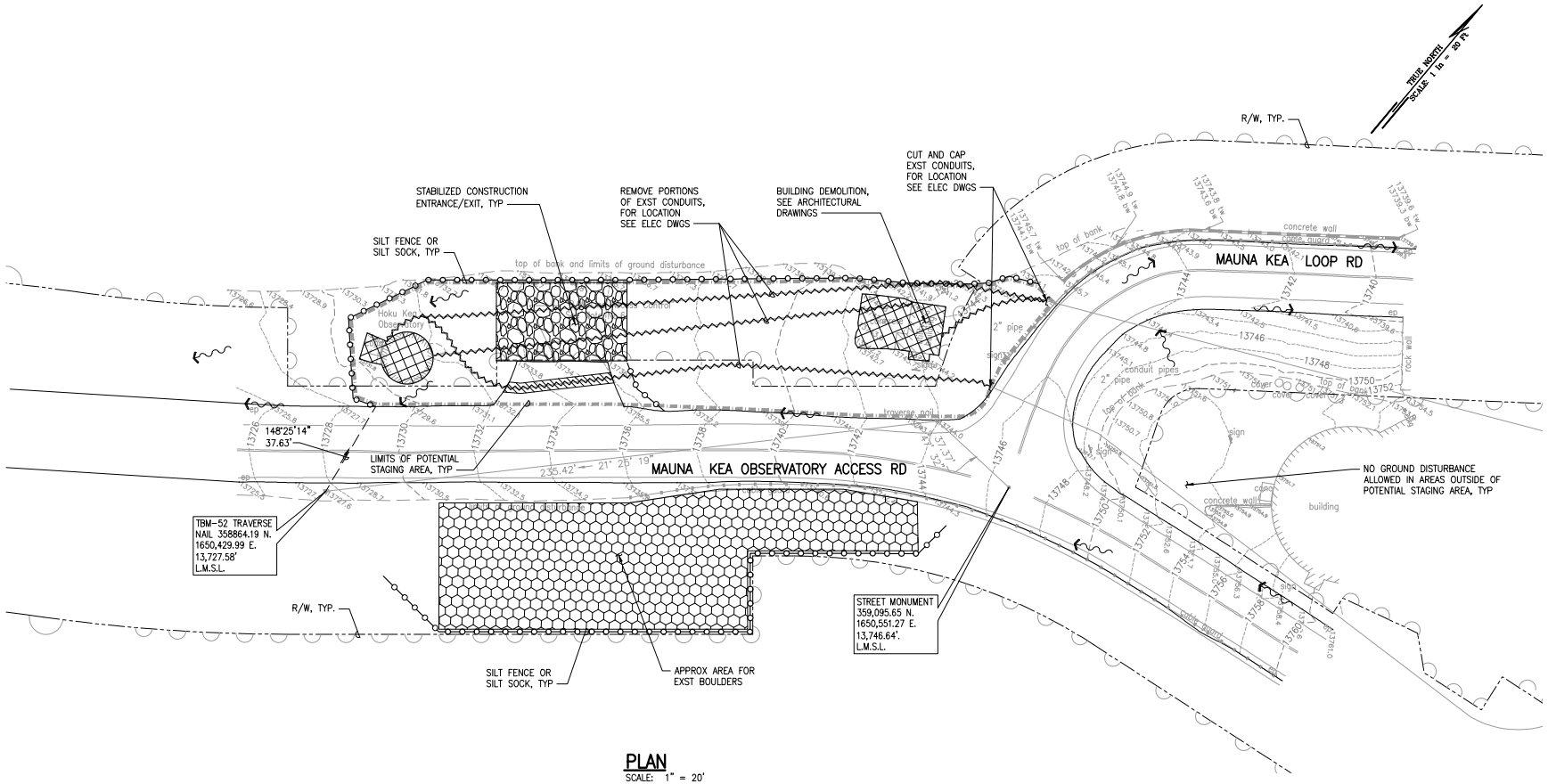
GENERAL NOTES - 2

SSFM INTERNATIONAL, INC.

DESIGNED BY: RRI	CHECKED BY:	PROJECT NO. UHH-16029	SHEET C-0.2
DRAWN BY: MGC	APPROVED BY:	DATE AUG 2021	OF ..... SHTS
SCALE: AS NOTED			

APRIL 28, 2022
SIGNATURE EXPIRATION DATE OF LICENSE

SHEET SIZE: 24" X 36" FILE NAME: C:_CIVIL 3D PROJECTS\2019_180.000 UHH HOKU KEA DECOMMISSIONING\01 CE DWG\C-01_02 GEN NOTES.DWG BY: MCORONADO



PLAN
SCALE: 1" = 20'

LEGEND:

- 13750 — EXST MAJOR CONTOUR
- 13748 — EXST MINOR CONTOUR
- EXST FLOW DIRECTION
- SILT FENCE OR FILTER SOCK, SEE DET 1/C-3.0 2/C-3.0
- RIGHT OF WAY
- EXST BLDG AND CONC TO BE DEMOLISHED SEE ARCH DWGS
- STABILIZED CONSTRUCTION ENTRANCE/EXIT, SEE DET 3/C-3.0
- APPROX LOCATION OF EXST AC PAVEMENT TO BE DEMOLISHED
- APPROX LOCATION OF EXST CONDUIT LINE(S) TO BE DEMOLISHED SEE ELEC DWGS
- APPROX AREA OF EXST BOULDERS

GRAPHIC SCALE:
20' 10' 0 20' 40'
SCALE: 1" = 20'

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning
University of Hawai`i at Hilo

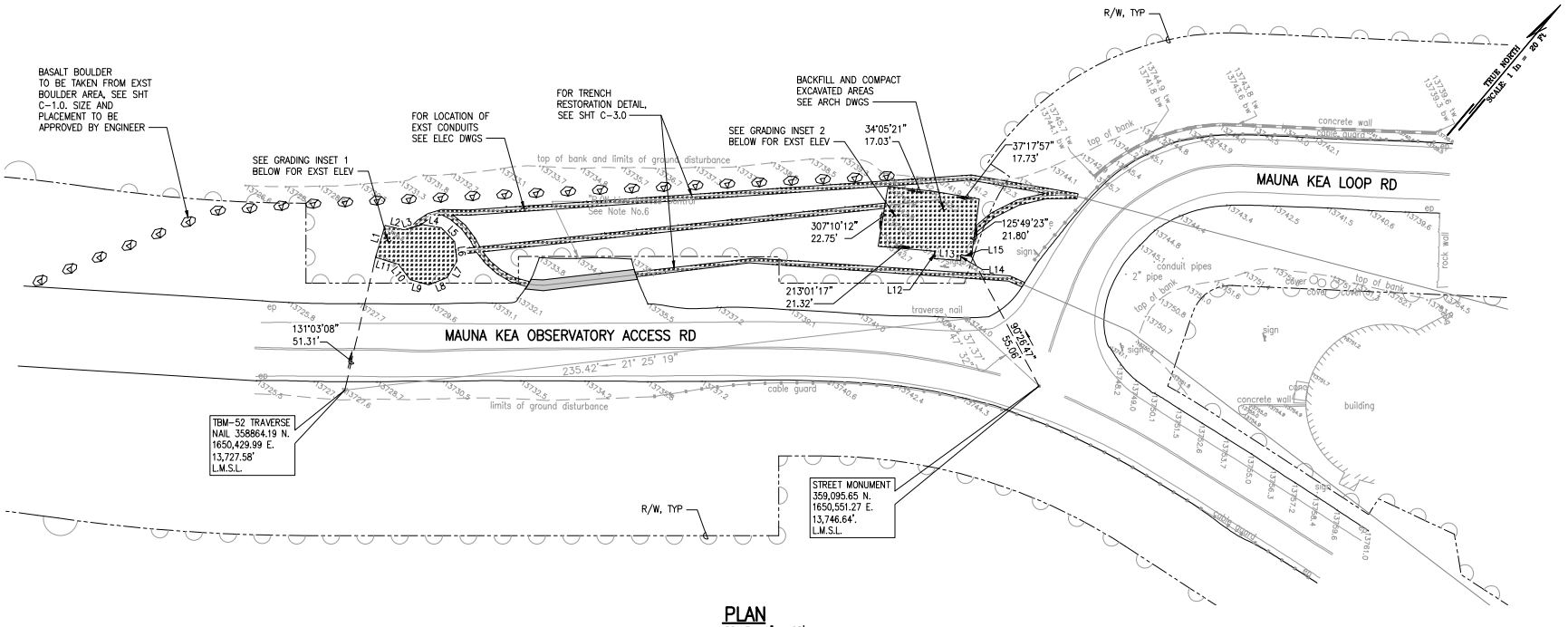
EXISTING CONDITION, DEMOLITION AND EROSION CONTROL PLAN

SSFM INTERNATIONAL, INC.

DESIGNED BY:	CHECKED BY:	PROJECT NO.	SHEET
RSI		UHH-16029	C-1.0
DRAWN BY: MGC	APPROVED BY:	DATE AUG 2021	OF ..... SHTS
SCALE: AS NOTED			

APPROVAL DATE
SIGNATURE EXPIRATION DATE OF LICENSE

SHEET SIZE: 24" X 36" FILE NAME: C:_CIVIL 3D PROJECTS\2019_180.000 UHH HOKU KEA DECOMMISSIONING\01 CE DWG\C-10 EXCON DEMO EC.DWG BY: MCORONADO



LINE DATA		
LINE #	AZIMUTH	LENGTH
L1	134°41'28"	12.47'
L2	220°36'24"	7.26'
L3	192°12'36"	7.09'
L4	216°51'37"	7.32'
L5	254°10'27"	7.32'
L6	291°29'16"	7.32'
L7	328°48'06"	7.32'
L8	6°06'56"	7.32'
L9	43°25'46"	7.32'
L10	80°44'36"	7.32'
L11	44°58'26"	8.99'
L12	305°58'23"	2.71'
L13	212°53'01"	10.07'
L14	122°53'01"	2.17'
L15	215°58'08"	4.05'

LEGEND:

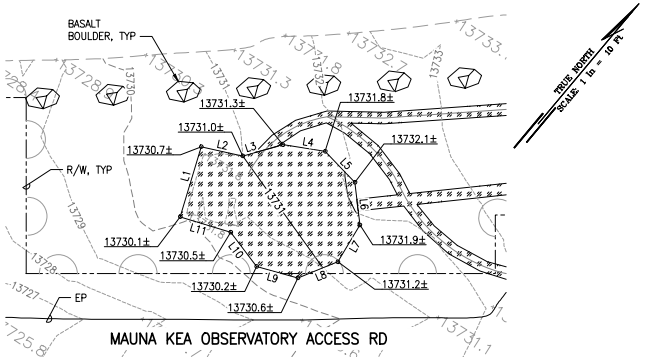
NEW AC PVMT

BACKFILL AND COMPACT

XX.X± MATCH EXST GROUND ELEV

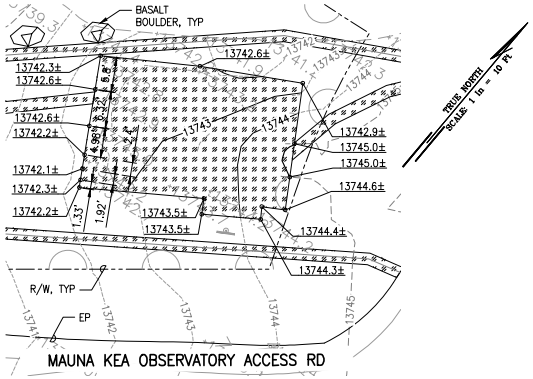
PLAN

SCALE: 1" = 20'



GRADING INSET 1

SCALE: 1" = 10'



GRADING INSET 2

SCALE: 1" = 10'

GRAPHIC SCALE:

20' 10' 0 20' 40'

SCALE: 1" = 20'

10' 5' 0 10' 20'

SCALE: 1" = 10'

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

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STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

SITE AND GRADING PLAN

SSFM INTERNATIONAL, INC.

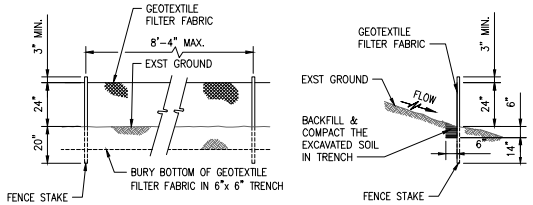
DESIGNED BY: RRI	CHECKED BY:	PROJECT NO. UHH-16029	SHEET C-2.0
DRAWN BY: MGC	APPROVED BY:	DATE AUG 2021	OF SHTS
SCALE: AS NOTED			

APR. 30, 2022
EXPIRATION DATE OF LICENSE
SIGNATURE

SHEET SIZE: 24" X 36" FILE NAME: W:_CIVIL 3D PROJECTS\2019_180.000 UHH HOKU KEA DECOMMISSIONING\01 CE DWG\C-20 SITE GRADING PLAN.DWG BY: MCORONADO

NOTES:

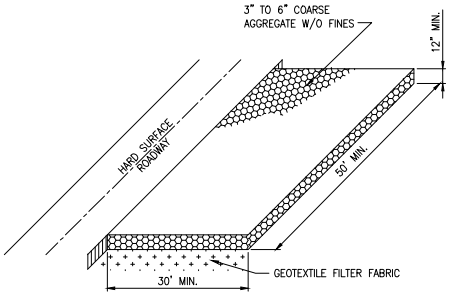
1. THE FILTER FABRIC SHALL BE A MINIMUM OF 36 INCHES WIDE.
2. IF SILT FENCE IS OBTAINED FROM MANUFACTURER AS A PACKAGE (I.E. FABRIC ATTACHED TO POST) THE MANUFACTURER'S INSTALLATION INSTRUCTION SHALL BE ADHERED TO.
3. FENCE STAKES MAY BE WOOD OR METAL, MUST BE CAPABLE OF SUPPORTING ANTICIPATED LOADS.



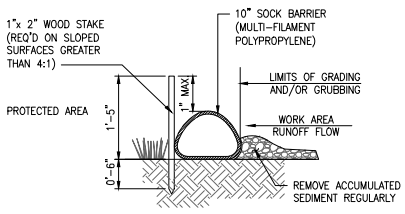
1 C-3.0 SILT FENCE
NOT TO SCALE

NOTE:

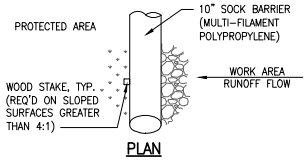
ALL POINTS OF EGRESS AND INGRESS TO THE SITE SHALL BE PROTECTED WITH A STABILIZED CONSTRUCTION ENTRANCE.



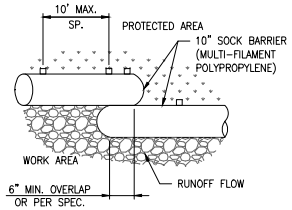
3 C-3.0 STABILIZED CONSTRUCTION ENTRANCE/EXIT
NOT TO SCALE



SECTION



PLAN



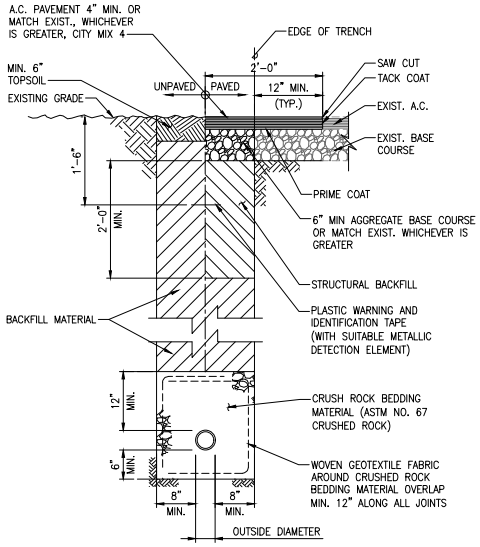
OVERLAP

SLOPE GRADIENT	ANCHOR SPACING
<4:1	NOT REQ'D
4:1 TO 3:1	10'
>3:1 TO 2:1	5' to 10'
>2:1	5'

NOTES:

1. SOCK BARRIER FILL COMPOSITION IS WOOD MULCH.
2. SOCK BARRIER FILL SHALL NOT CONTAIN BIOSOLIDS AND SHOULD BE CONSISTENT WITH EPA GUIDELINES.

2 C-3.0 FILTER SOCK BARRIER
NOT TO SCALE



4 C-3.0 TRENCH RESTORATION PAVED/UNPAVED
NOT TO SCALE

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

CIVIL DETAILS

SSFM INTERNATIONAL, INC.

DESIGNED BY: RRI	CHECKED BY:	PROJECT NO. UHH-16029	SHEET C-3.0
DRAWN BY: MGC	APPROVED BY:	DATE AUG 2021	OF ..... SHTS
SCALE: AS NOTED			

APPR. 28, 2022
EXPIRATION DATE OF LICENSE
SIGNATURE

SHEET SIZE: 24" X 36" FILE NAME: W:_CIVIL 3D PROJECTS\2019_180.000 UHH HOKU KEA DECOMMISSIONING\01 CE DWGS\C-30 DETAILS.DWG BY: RSWETLISHOFF

ABBREVIATIONS

NOTE: NOT ALL ABBREVIATIONS ARE NECESSARILY USED

A	
A.B.	ANCHOR BOLT
A/C	AIR CONDITIONING
ACOUST.	ACOUSTICAL
ADJ.	ADJUSTABLE
A.F.F.	ABOVE FINISH FLOOR
AL.	ALUMINUM
ALT.	ALTERNATE
ANOD.	ANODIZED
A.P.	ACCESS PANEL
APPROX.	APPROXIMATE
ARCH.	ARCHITECTURAL
B	
BD.	BOARD
BLDG.	BUILDING
BLK.	BLOCK
BM.	BEAM
BOT.	BOTTOM
C	
CAB.	CABINET
CEM.	CEMENT
CER.	CERAMIC
C.J.	CONTROL JOINT
CLG.	CEILING
CLKG.	CAULKING
CLR.	CLEAR
C.M.U.	CONCRETE MASONRY UNIT
CNTR.	COUNTER
C.O.	CLEAN OUT
CONC.	CONCRETE
COND.	CONDITION
CONN.	CONNECTION
CONSTR.	CONSTRUCTION
CONT.	CONTINUOUS
CONTR.	CONTRACTOR
CORR.	CORRIDOR
C.P.	CEMENT PLASTER
CPT.	CARPET
C.T.	CERAMIC TILE
CTR.	CENTER
CTSK.	COUNTERSUNK
D	
D.	DEEP/DEPTH
D.A.	DOUBLE ACTING
DBL.	DOUBLE
DEPT.	DEPARTMENT
DET.	DETAIL
D.F.	DRINKING FOUNTAIN
DIA.	DIAMETER
DIM.	DIMENSION
DISP.	DISPENSER
D.O.	DOOR OPENING
DN.	DOWN
DR.	DOOR
DWG.	DRAWING
DWR.	DRAWER
E	
E.	EAST
EA.	EACH
E.F.	EXTERIOR FINISH
E.F.S.	EXTERIOR FINISH SYSTEM
E.J.	EXPANSION JOINT
EL.	ELEVATION
ELEC.	ELECTRICAL
ELEV.	ELEVATOR
EMER.	EMERGENCY
ENCL.	ENCLOSURE
E.P.	ELECTRICAL PANEL
EQ.	EQUAL
EQUIP.	EQUIPMENT
E.W.C.	ELECTRIC WATER COOLER
EXIST.	EXISTING
EXPO.	EXPOSED
EXP.	EXPANSION
EXT.	EXTERIOR
F	
F.A.	FIRE ALARM
F.D.	FLOOR DRAIN
FDN.	FOUNDATION
F.E.	FIRE EXTINGUISHER
F.E.C.	FIRE EXTINGUISHER CABINET
F.F.	FACTORY FINISH
F.F. EL.	FINISH FLOOR ELEVATION
F.H.C.	FIRE HOSE CABINET
FIN.	FINISH
FL.	FLOOR
FLDG.	FOLDING
FLUOR.	FLUORESCENT
F.O.C.	FACE OF CONCRETE
F.O.F.	FACE OF FINISH
F.O.M.	FINISH OF MASONRY
F.O.S.	FACE OF STUD
FRPR.	FIREPROOF(ING)
FR.	FRAME
F.S.	FINISH SYSTEM
FT.	FOOT (OR FEET)
FTG.	FOOTING
FURR.	FURRING
FUT.	FUTURE
G	
GA.	GAUGE
GALV.	GALVANIZED
G.B.	GRAB BAR
GL.	GLASS
GND.	GROUND
GR.	GRADE
GYP.	GYPSUM

H	
H.	HEIGHT/HIGH
H.C.	HOLLOW CORE
HDWD.	HARDWOOD
HDWR.	HARDWARE
H.M.	HOLLOW METAL
HORIZ.	HORIZONTAL
HR.	HOUR
H.V.A.C.	HEATING, VENTILATION & AIR CONDITIONING
H.W.	HOT WATER
I	
I.D.	INSIDE DIAMETER
INCL.	INCLUSIVE OR INCLUDED
INSUL.	INSULATION
INT.	INTERIOR
J	
JAN.	JANITOR
JST.	JOIST
JT.	JOINT
K	
KIT.	KITCHEN
L	
LAB.	LABORATORY
LAM.	LAMINATE
LAV.	LAVATORY
L.F.	LINEAR FEET
LT.	LIGHT
M	
MAT.	MATERIAL
MAX.	MAXIMUM
M.D.	METAL DECK
MECH.	MECHANICAL
MET.	METAL
MFR.	MANUFACTURER
MIN.	MINIMUM
MISC.	MISCELLANEOUS
M.O.	MASONRY OPENING
MTD.	MOUNTED
MTG.	MOUNTING
MUL.	MULLION
N	
N.	NORTH
N.I.C.	NOT IN CONTRACT
NO.	NUMBER
NOM.	NOMINAL
N.T.S.	NOT TO SCALE
O	
OA.	OVERALL
OBS.	OBSCURE
O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O.F.C.I.	OWNER FURNISHED CONTRACTOR INSTALLED
O.F.O.I.	OWNER FURNISHED OWNER INSTALLED
OFF.	OFFICE
O.H.	OVERHANG
OPNG.	OPENING
OPP.	OPPOSITE
OVHD.	OVERHEAD
P	
PT.	PAINT
PC.	PIECE
PL.	PLATE
P-LAM.	PLASTIC LAMINATE
PLAS.	PLASTER
PLBG.	PLUMBING
PLYWD.	PLYWOOD
PNL.	PANEL
PR.	PAIR
P.T.D.	PAPER TOWEL DISPENSER
PART.	PARTITION
P.T.R.	PAPER TOWEL RECEPTACLE
R	
R.	RISER
RAD.	RADIUS
REF.	REFERENCE
REFR.	REFRIGERATOR
REINF.	REINFORCED OR REINFORCING
REQD.	REQUIRED
REV.	REVISED
RESIL.	RESILIENT
R.H.	ROBE HOOK
RM.	ROOM
R.O.	ROUGH OPENING

S	
S.	SOUTH
S.A.	SINGLE ACTING
S.C.	SOLID CORE
S.C.D.	SEAT COVER DISPENSER
SCHED.	SCHEDULE
S.D.	SOAP DISPENSER
SECT.	SECTION
SHT.	SHEET
SHWR.	SHOWER
SIM.	SIMILAR
SL.	SLOPE
S.N.D.	SANITARY NAPKIN DISPENSER
S.N.R.	SANITARY NAPKIN RECEPTACLE
SPEC.	SPECIFICATION
SQ.	SQUARE
SST.	STAINLESS STEEL
S. SNK.	SERVICE SINK
STD.	STANDARD
STL.	STEEL
STOR.	STORAGE
STRUCT.	STRUCTURAL
SURR.	SURROUND
SUSP.	SUSPENDED
SYM.	SYMMETRICAL
SYS.	SYSTEM
T	
T.	TREAD
T.B.	TOWEL BAR
TEL.	TELEPHONE
TEMP.	TEMPERED
T&G	TONGUE AND GROOVE
THK.	THICK
TKBD.	TACKBOARD
TOIL.	TOILET
T.P.D.	TOILET PAPER DISPENSER
T.P.H.	TOILET PAPER HOLDER
T.V.	TELEVISION
TYP.	TYPICAL
T	
T.	TREAD
T.B.	TOWEL BAR
TEL.	TELEPHONE
TEMP.	TEMPERED
T&G	TONGUE AND GROOVE
THK.	THICK
TKBD.	TACKBOARD
TOIL.	TOILET
T.P.D.	TOILET PAPER DISPENSER
T.P.H.	TOILET PAPER HOLDER
T.V.	TELEVISION
TYP.	TYPICAL
U	
UNFIN.	UNFINISHED
U.O.N.	UNLESS OTHERWISE NOTED
UR.	URINAL
V	
V.C.T.	VINYL COMPOSITION TILE
VERT.	VERTICAL
VEST.	VESTIBULE
W	
W.	WIDTH
W/	WITH
W.C.	WATER CLOSET
WD.	WOOD
WDW.	WINDOW
W.H.	WATER HEATER
W.O.	WHERE OCCURS
W/O	WITHOUT
WP.	WATERPROOF
W.R.	WATER RESISTANT
WT.	WEIGHT
W.W.M.	WELDED WIRE MESH

ARCHITECTURAL SYMBOLS

SECTION — SECTION IDENTIFICATION; SHEET WHERE SECTION IS DRAWN

VIEW REFERENCE — VIEW IDENTIFICATION; SHEET WHERE VIEW IS DRAWN

ROOM IDENTIFICATION — ROOM NAME; ROOM BOX; ROOM NUMBER

REVISION — REVISION NUMBER

DOOR TYPE — DOOR SYMBOL; DOOR NUMBER

SHEET NUMBER — DISCIPLINE; SEQUENCE

WINDOW TYPE — WINDOW SYMBOL; WINDOW NUMBER

PARTITION TYPE — PARTITION TYPE; PARTITION SYMBOL

GRID BUBBLE — GRID SYMBOL; GRID NUMBER

INTERIOR ELEVATION

DATA POINT

NORTH ARROW

&	AND
@	AT
#	NUMBER
∠	ANGLE
℄	CENTER LINE
⊥	PERPENDICULAR
Ø	DIAMETER OR ROUND

MATERIAL INDICATIONS

- EARTH
- CONCRETE CAST IN PLACE OR PRECAST
- C.M.U., CONCRETE BLOCK
- PLYWOOD
- GLASS
- ACOUSTIC TILE, BOARD OR PANEL
- GYPSUM BOARD
- INSULATION, BATT
- STONE, MARBLE, SIMULATED MARBLE, TERRAZZO
- STEEL (OMIT INDICATION IN THIN MATERIAL)
- METAL LATH
- WOOD, FINISH
- WOOD FRAMING THROUGH MEMBER
- WOOD FRAMING INTERRUPTED MEMBER
- INSULATION RIGID
- CARPET & PAD
- CERAMIC TILE, QUARRY TILE OR RESILIENT FLOORING (SHOW PROFILE ONLY)
- EXISTING BUILDING SHELL

DEMOLITION NOTES

1. CAREFULLY STUDY CONSTRUCTION DOCUMENTS AND VISIT THE SITE TO VERIFY THE EXTENT AND LOCATION OF DEMOLITION WORK TO BE PERFORMED.
2. ALL ITEMS SCHEDULED TO BE REMOVED BY THE CONTRACTOR SHALL BE CONSIDERED TO BE THE CONTRACTOR'S PROPERTY AND SHALL BE PROMPTLY REMOVED FROM THE SITE (U.O.N.). DEMOLISHED MATERIAL TO BE RECYCLED/REUSED TO THE EXTENT POSSIBLE.
3. PROVIDE ALL LABOR AND MATERIAL/EQUIPMENT AS REQUIRED TO COMPLETE DEMOLITION AND REMOVAL OF ALL ITEMS AS INDICATED AND RESTORE TO ADJACENT CONDITION. REFER TO CIVIL DRAWINGS.

GENERAL NOTES

1. ALL CONSTRUCTION SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE, THE LATEST STATE OF HAWAII AMENDMENTS AND ORDINANCES.
2. KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS, CONSTRUCTION DEBRIS, RUBBISH AND DISPOSE OF LAWFULLY AND IN ACCORDANCE WITH THE CONSTRUCTION WASTE MANAGEMENT PLAN.
3. IF THE CONTRACTOR SHALL PERFORM WORK CAUSING UNIQUE NOISE, ODORS OR OTHER DISTURBANCES OUTSIDE OF REGULAR BUSINESS HOURS (M-F 8:30AM - 3:30PM), SUCH WORK SHALL BE SCHEDULED WITH OWNER.
4. ALL WORK SHALL BE CONFINED TO THE DESIGNATED AREA OF WORK. ANY DAMAGE CAUSED BY THE CONTRACTOR TO THE ADJOINING IMPROVEMENTS AND SITE SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE UHH.
5. ALL ITEMS NOT LABELED TO BE REMOVED, SALVAGED, OR DEMOLISHED SHALL BE PROTECTED DURING THE CONSTRUCTION PERIOD.
6. THE INTENT OF THE DRAWINGS IS TO PRODUCE THE INTENDED RESULTS UNDER RECOGNIZED STANDARDS EVEN IF NOT SHOWN, BUT REASONABLY INFERABLE THEREFROM. THE CONTRACTOR SHALL CHECK ALL DRAWINGS FURNISHED TO HIM/HER IMMEDIATELY UPON THEIR RECEIPT AND SHALL PROMPTLY NOTIFY THE ARCHITECTS OF ANY DISCREPANCIES. LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS, AND DETAILS TAKE PRECEDENT OVER ALL. THE CONTRACTOR SHALL COMPARE ALL DRAWINGS AND VERIFY THE DETAILS BEFORE LAYING OUT THE WORK AND SHALL BE RESPONSIBLE FOR ANY ERRORS WHICH MIGHT HAVE BEEN AVOIDED THEREBY. SPECIFICATIONS SHALL GOVERN OVER DRAWINGS.
7. TO THE BEST OF OUR KNOWLEDGE AND BELIEF, THESE PLANS ARE IN COMPLIANCE WITH THE ACCESSIBILITY GUIDELINES CONTAINED IN THE 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN
8. ALL WORK TO BE IN COMPLIANCE WITH ALL REQUIREMENTS OF LATEST MAUNA KEA COMPREHESIVE MANAGEMENT PLAN, AND OTHER CONSTRUCTION RELATED PLANS.

REVISION NO.	SYMBOL	DESCRIPTION	SHT. ___ OF ___	DATE

UNIVERSITY OF HAWAI'I AT HILO
STATE OF HAWAI'I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

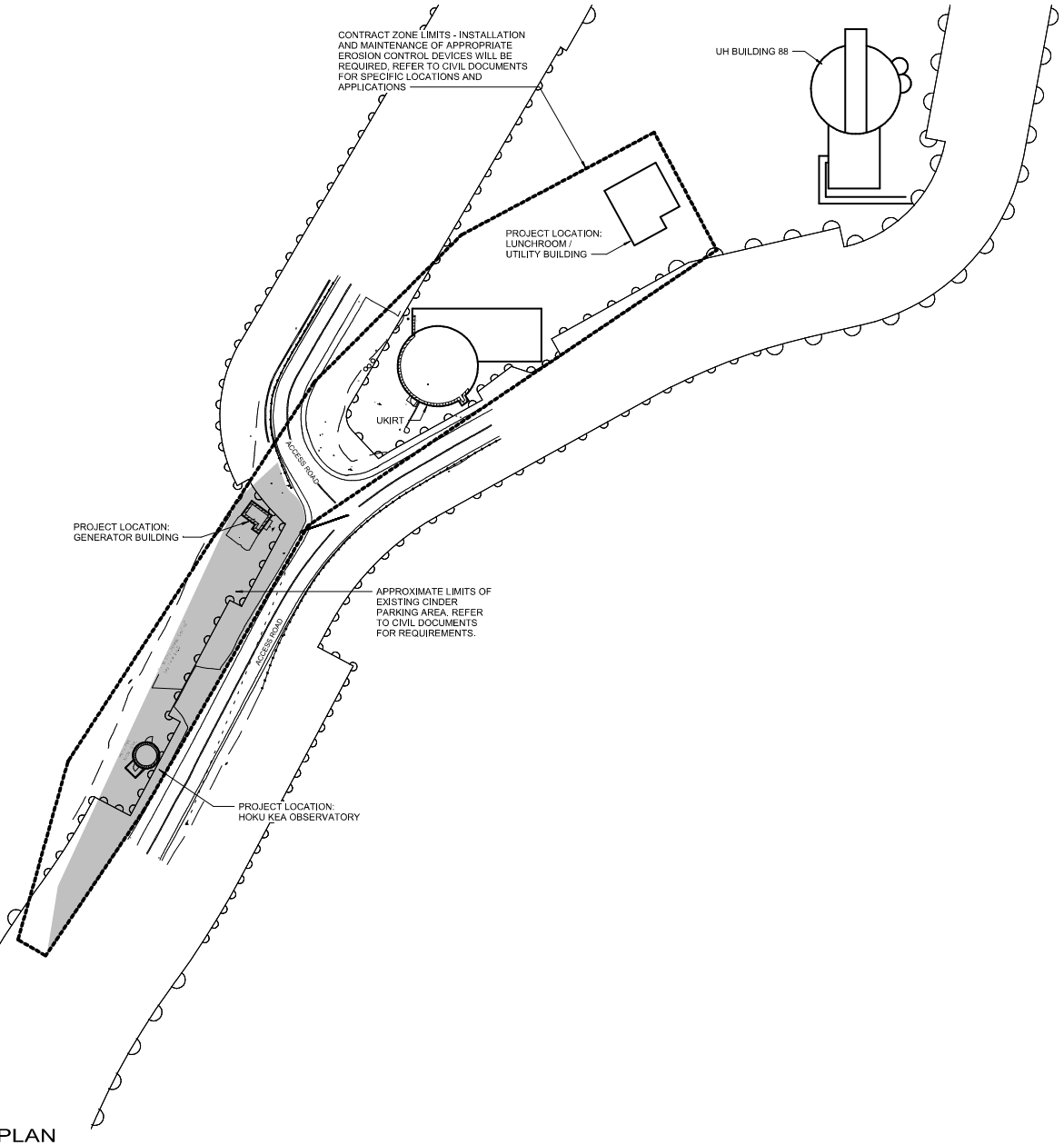
ABBR., SYMB., GENERAL & DEMOLITION NOTES

SSFM INTERNATIONAL, INC.

DESIGNED BY: –	CHECKED BY: XX	PROJECT NO. UHH-16029	SHEET
DRAWN BY: –	APPROVED BY:	DATE AUG 2021	A-0.0
	SCALE: AS NOTED		OF ___ SHEETS

APRIL 30, 2022
SIGNATURE EXPIRATION DATE OF LICENSE

SHEET SIZE: 24" X 36"



1 A-0.1 EXISTING SITE PLAN

1" = 40'-0"

NOTES:

1. REFER TO OVERALL ELECTRICAL SITE PLAN E-1.0 FOR ELECTRICAL WORK.
2. REFER TO CIVIL DOCUMENTS FOR CIVIL REQUIREMENTS.

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

UNIVERSITY OF HAWAI'I AT HILO
STATE OF HAWAI'I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

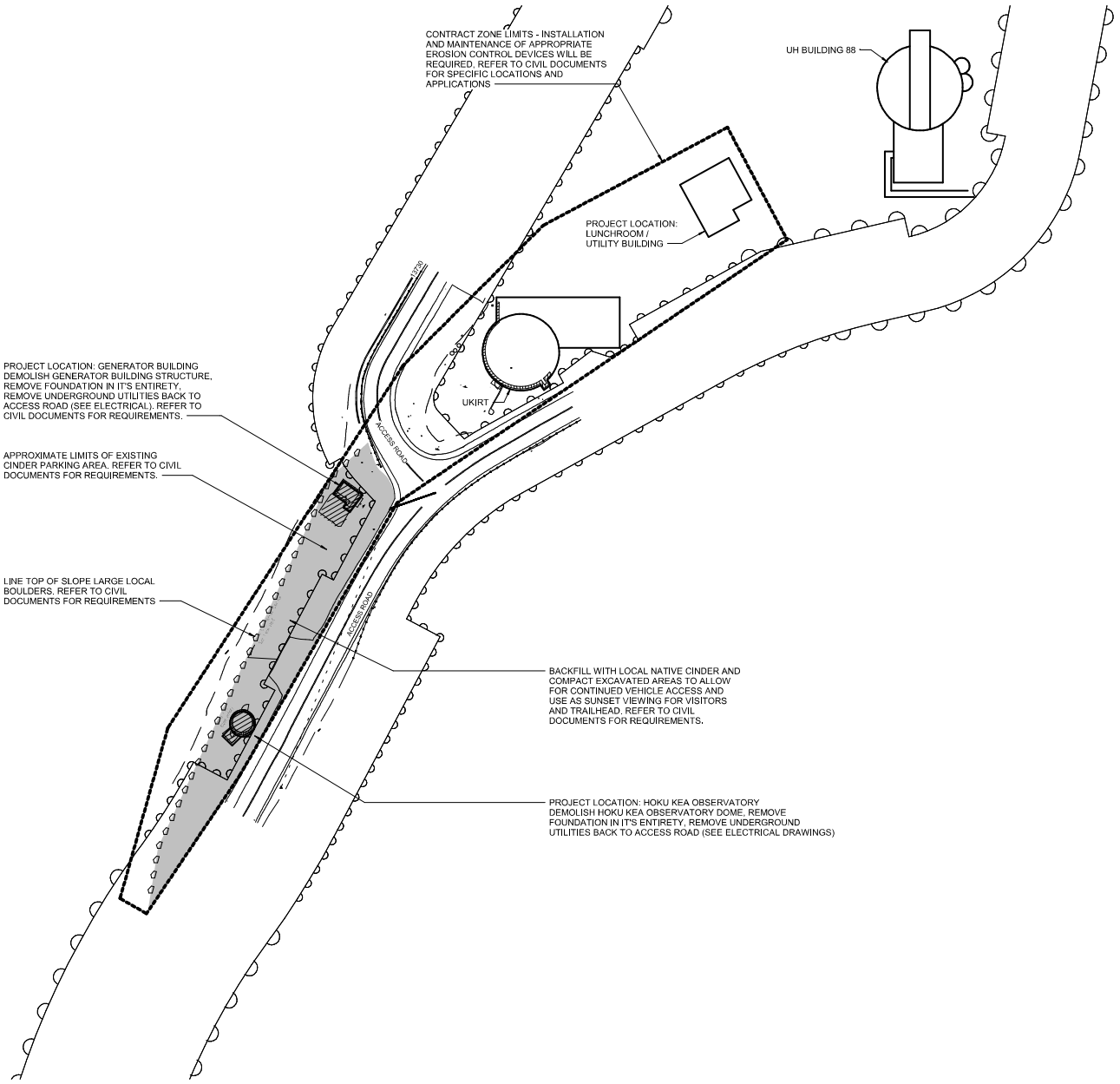
EXISTING SITE PLAN

SSFM INTERNATIONAL, INC.

DESIGNED BY:	CHECKED BY:	PROJECT NO.	SHEET
–	XX	UHH-16029	A-0.1
DRAWN BY:	APPROVED BY:	DATE	
–		AUG 2021	
SCALE: AS NOTED			

APRIL 30, 2022
EXPIRATION DATE OF LICENSE
SIGNATURE

SHEET SIZE: 24" X 36"



1 / A-0.3 **SITE PLAN**

1" = 40'-0"

SHEET SIZE: 24" X 36"

REVISION NO.	SYMBOL	DESCRIPTION	SHT OF	DATE

UNIVERSITY OF HAWAI'I AT HILO
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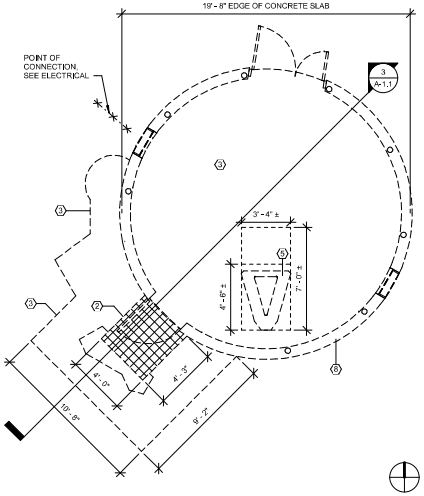
SITE PLAN

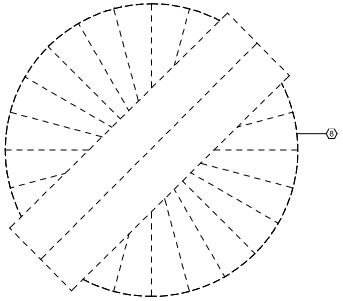
SSFM INTERNATIONAL, INC.

DESIGNED BY: –	CHECKED BY: XX	PROJECT NO. UHH-16029	SHEET A-0.2
DRAWN BY: –	APPROVED BY:	DATE AUG 2021	OF ___ SHTS
SIGNATURE	EXPIRATION DATE OF LICENSE	SCALE: AS NOTED	



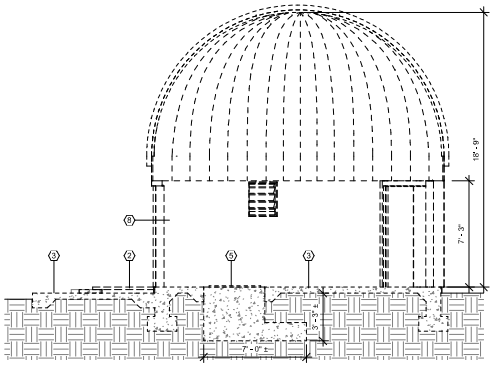
1 A-1.1 DEMOLITION PLAN - OBSERVATORY

1/4" = 1'-0"



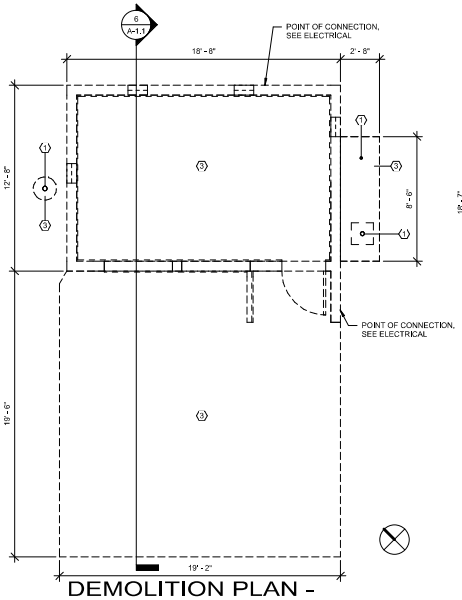
2 A-1.1 DEMOLITION ROOF PLAN - OBSERVATORY

1/4" = 1'-0"



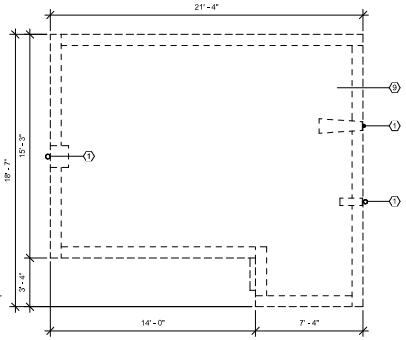
3 A-1.1 DEMOLITION BUILDING SECTION - OBSERVATORY

1/4" = 1'-0"



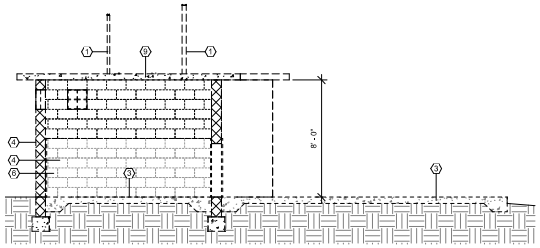
4 A-1.1 DEMOLITION PLAN - GENERATOR BUILDING

1/4" = 1'-0"



5 A-1.1 DEMOLITION ROOF PLAN - GENERATOR BUILDING

1/4" = 1'-0"



6 A-1.1 DEMOLITION BUILDING SECTION - GENERATOR BUILDING

1/4" = 1'-0"

SHEET NOTES

1. WALLS, DOORS, METAL LOUVERS, WALL BASE, WALL WAINSCOT, WALL MOUNTED CABINETRY AND FIRE EXTINGUISHERS TO BE REMOVED UON
2. SEE ELECTRICAL SHEETS FOR ELECTRICAL DEMOLITION INCLUDING UNDERGROUND UTILITIES, AS APPLICABLE
3. REFER TO SPECIFICATIONS SECTION 01715 FOR HAZMAT SURVEY FOR ANY HAZARDOUS MATERIAL IDENTIFIED. FOR HAZMAT HANDLING AND DISPOSAL, SEE SPECIFICATIONS SECTION 13282 AND 13288.

KEYNOTE LEGEND

1. ELECTRICAL POLE TO BE REMOVED, TYP.
2. STEEL GRATE TO BE REMOVED
3. CONCRETE PAD/FOUNDATION TO BE REMOVED
4. REMOVE EXTERIOR CMU WALL AND CONCRETE FOUNDATION
5. STEEL TELESCOPE BASE PLATE AND CONCRETE FOUNDATION TO BE REMOVED
6. WAINSCOT TO BE REMOVED
8. BUILDING SHELL AND STRUCTURAL COLUMNS TO BE REMOVED UON
9. REMOVE EXISTING CONCRETE ROOF COMPLETELY

LEGEND

- WALL TO REMAIN
- WALL TO BE REMOVED
- MISC. ITEMS TO BE REMOVED
- UTILITY LINE TO REMAIN
- UTILITY LINE TO BE REMOVED
- DOOR TO BE REMOVED
- CONCRETE SLAB TO BE REMOVED
- NOT IN CONTRACT
- GLASS BLOCK OR LOUVER TO BE REMOVED

REVISION NO.	SYMBOL	DESCRIPTION	SHT. NO. OF	DATE

UNIVERSITY OF HAWAI'I AT HILO
STATE OF HAWAI'I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

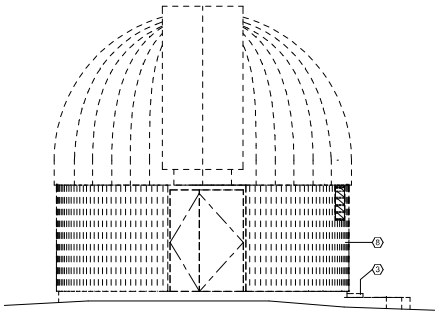
DEMO PLAN, ROOF, AND SECTION

SSFM INTERNATIONAL, INC.

DESIGNED BY:	CHECKED BY:	PROJECT NO.	SHEET
–	XX	UHH-16029	A-1.1
DRAWN BY:	APPROVED BY:	DATE	
–		AUG 2021	
SCALE: AS NOTED			OF ___ SHTS

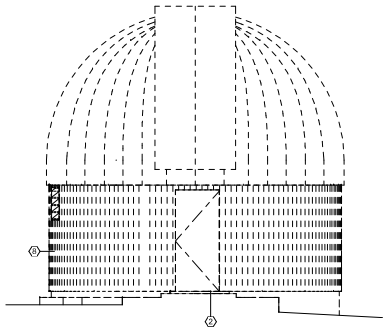
APRIL 30, 2022
SIGNATURE EXPIRATION DATE OF LICENSE

SHEET SIZE: 24" X 36"



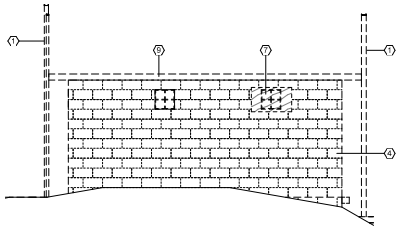
1 A-2.1 EXTERIOR ELEVATION - OBSERVATORY - NORTH

1/4" = 1'-0"



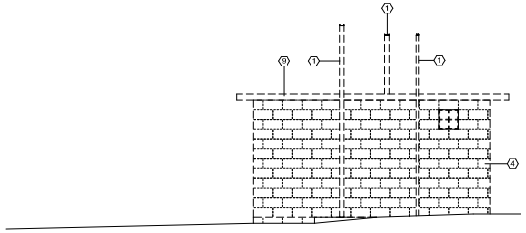
2 A-2.1 EXTERIOR ELEVATION - OBSERVATORY - SW

1/4" = 1'-0"



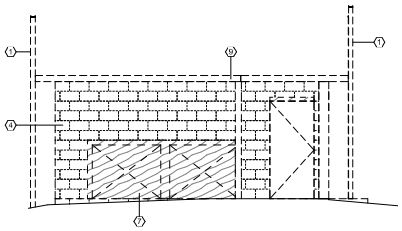
3 A-2.1 EXTERIOR ELEVATION - GENERATOR BUILDING - A

1/4" = 1'-0"



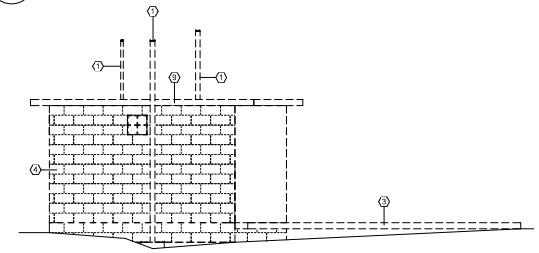
4 A-2.1 EXTERIOR ELEVATION - GENERATOR BUILDING - B

1/4" = 1'-0"



5 A-2.1 EXTERIOR ELEVATION - GENERATOR BUILDING - C

1/4" = 1'-0"



6 A-2.1 EXTERIOR ELEVATION - GENERATOR BUILDING - D

1/4" = 1'-0"

SHEET NOTES

1. WALLS, DOORS, METAL LOUVERS, WALL BASE, WALL WAINSCOT, WALL MOUNTED CABINETRY AND FIRE EXTINGUISHERS TO BE REMOVED UON
2. SEE ELECTRICAL SHEETS FOR ELECTRICAL DEMOLITION INCLUDING UNDERGROUND UTILITIES, AS APPLICABLE
3. REFER TO SPECIFICATIONS SECTION 01715 FOR HAZMAT SURVEY FOR ANY HAZARDOUS MATERIAL IDENTIFIED. FOR HAZMAT HANDLING AND DISPOSAL, SEE SPECIFICATIONS SECTION 13282 AND 13288.

KEYNOTE LEGEND

1	ELECTRICAL POLE TO BE REMOVED, TYP.
2	STEEL GRATE TO BE REMOVED
3	CONCRETE PAD/FOUNDATION TO BE REMOVED
4	REMOVE EXTERIOR CMU WALL AND CONCRETE FOUNDATION
6	OPENINGS COVERED BY PLYWOOD TO BE REMOVED
8	BUILDING SHELL AND STRUCTURAL COLUMNS TO BE REMOVED UON
9	REMOVE EXISTING CONCRETE ROOF COMPLETELY

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

UNIVERSITY OF HAWAI'I AT HILO
STATE OF HAWAI'I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

DEMO EXTERIOR ELEVATIONS

SSFM INTERNATIONAL, INC.

DESIGNED BY: –	CHECKED BY: XX	PROJECT NO. UHH-16029	SHEET A-2.1
DRAWN BY: –	APPROVED BY:	DATE AUG 2021	OF ___ SHEETS
SCALE: AS NOTED			

APRIL 30, 2022
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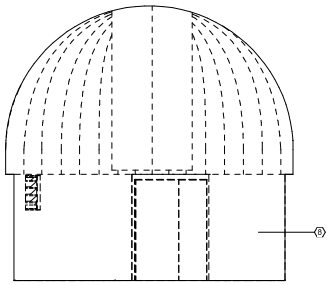
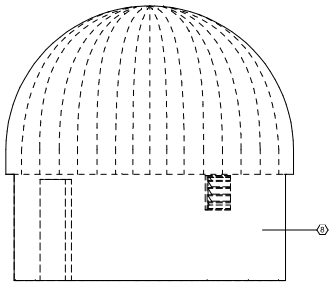


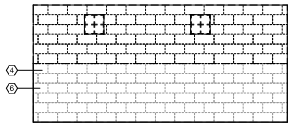
1 A-3.0 INTERIOR ELEVATION OBSERVATORY - A

1/4" = 1'-0"



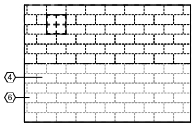
2 A-3.0 INTERIOR ELEVATION OBSERVATORY - D

1/4" = 1'-0"



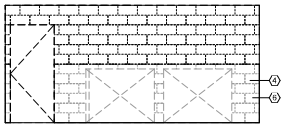
3 A-3.0 INTERIOR ELEVATION GENERATOR BUILDING - A

1/4" = 1'-0"



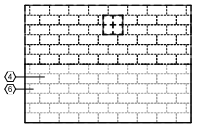
4 A-3.0 INTERIOR ELEVATION GENERATOR BUILDING - B

1/4" = 1'-0"



5 A-3.0 INTERIOR ELEVATION GENERATOR BUILDING - C

1/4" = 1'-0"



6 A-3.0 INTERIOR ELEVATION GENERATOR BUILDING - D

1/4" = 1'-0"

SHEET NOTES

1. WALLS, DOORS, METAL LOUVERS, WALL BASE, WALL WAINSCOT, WALL MOUNTED CABINETRY AND FIRE EXTINGUISHERS TO BE REMOVED UON
2. SEE ELECTRICAL SHEETS FOR ELECTRICAL DEMOLITION INCLUDING UNDERGROUND UTILITIES, AS APPLICABLE
3. REFER TO SPECIFICATIONS SECTION 01715 FOR HAZMAT SURVEY FOR ANY HAZARDOUS MATERIAL IDENTIFIED. FOR HAZMAT HANDLING AND DISPOSAL, SEE SPECIFICATIONS SECTION 13282 AND 13288.

KEYNOTE LEGEND

4 REMOVE EXTERIOR CMU WALL AND CONCRETE FOUNDATION
6 WAINSCOT TO BE REMOVED
8 BUILDING SHELL AND STRUCTURAL COLUMNS TO BE REMOVED UON

SYMBOL	DESCRIPTION	DATE

UNIVERSITY OF HAWAI'I AT HILO
STATE OF HAWAI'I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

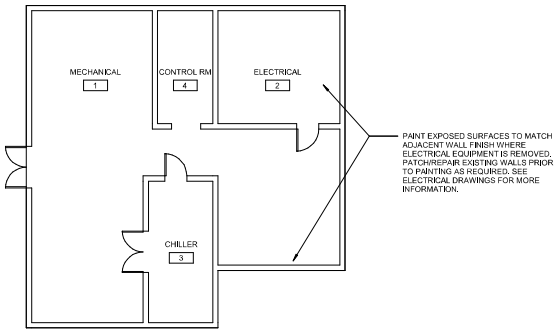
DEMO INTERIOR ELEVATIONS

SSFM INTERNATIONAL, INC.

DRAWN BY: –	CHECKED BY: XX	PROJECT NO. UHH-16029
TRACED BY: –	APPROVED BY:	DATE AUG 2021
SCALE: AS NOTED		SHEET A-3.0

SIGNATURE: APRIL 30, 2021 EXPIRATION DATE OF LICENSE:

SHEET SIZE: 24" X 36"



1
A-4.0

LUNCHROOM/UTILITY BUILDING PLAN

1/8" = 1'-0"

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

UNIVERSITY OF HAWAI'I AT HILO
STATE OF HAWAI'I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

LUNCHROOM/UTILITY BUILDING PLAN

SSFM INTERNATIONAL, INC.

DESIGNED BY:	CHECKED BY: XX	PROJECT NO. UHH-16029	SHEET
DRAWN BY:	APPROVED BY:	DATE AUG 2021	A-4.0
SCALE: AS NOTED			OF SHEETS

APR. 30, 2022
SIGNATURE EXPIRATION DATE OF LICENSE

SHEET SIZE: 24" X 36"

GENERAL ELECTRICAL SPECIFICATIONS

1. DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO COMMENCEMENT OF WORK.
2. THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE. DEMOLISH CONDUIT RUNS AS SPECIFIED WITH SCHEMATIC REPRESENTATION INDICATED ON THE DRAWINGS AND AS SPECIFIED.
3. CONTRACTOR SHALL REVIEW ARCHITECTURAL, STRUCTURAL, MECHANICAL AND OTHER DRAWINGS PRIOR TO BID.
4. CONTRACTOR SHALL VISIT SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED. CONTRACTOR SHALL REPORT DISCREPANCIES TO THE CONTRACTING OFFICER AND INCLUDE IN ITS BID ALL COSTS REQUIRED TO MAKE HIS WORK MEET EXISTING CONDITIONS.
5. ACCESS TO THE LUNCH ROOM/UTILITY BUILDING SHALL BE MAINTAINED AT ALL TIMES.
6. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER TO THE SATISFACTION OF THE CONTRACTING OFFICER.
7. WORK, MATERIALS AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES AND ORDINANCES.
8. PROVIDE PERMITS AND INSPECTIONS REQUIRED.
9. PROVIDE AS-BUILT DRAWINGS TO THE CONTRACTING OFFICER. DRAWINGS SHALL INCLUDE ALL ADDENDUM ITEMS, CHANGE ORDERS, ALTERATIONS, ETC.
10. PRESENT SUBMITTAL DATA AT ONE TIME BOUND IN PDF FORMAT OR PER THE STATE'S REQUIREMENTS. SUBMITTALS SHALL BE INDEXED IN A NEAT AND ORDERLY MANNER. PARTIAL SUBMITTALS WILL NOT BE ACCEPTED. SUBMITTALS SHALL INCLUDE ALL EQUIPMENT SPECIFIED UNDER THIS PROJECT. SHOULD CONTRACTOR FAIL TO PROVIDE SUBMITTALS, CONTRACTOR PROCEEDS AT ITS OWN RISK AND ANY COST FOR CORRECTIVE WORK WILL BE BORNE BY THE CONTRACTOR.
11. PENETRATIONS EXPOSED BY ELECTRICAL DEMOLITION IN FIRE RATED WALLS OR FLOORS SHALL BE SEALED BY A FIRESTOPPING SYSTEM UL LISTED FOR THE APPLICATION. INSTALL PENETRATION SEAL MATERIALS IN ACCORDANCE WITH PRINTED INSTRUCTIONS OF THE UL FIRE RESISTANCE DIRECTORY AND MANUFACTURERS INSTRUCTIONS. FIRESTOPPING SYSTEM SHALL BE EQUAL TO 3M FIRE BARRIER. FIRESTOPPING MATERIAL SHALL BE CAULK OR PUTTY TYPE. FIRESTOP ALL PENETRATIONS THROUGH FIRE RATED WALLS AS REQUIRED TO PRESERVE THE FIRE RATING OF THE STRUCTURE.

ELECTRICAL SYMBOLS

(D) or — ELECTRICAL DEMOLITION. REMOVE EQUIPMENT AND APPURTENANCES IN THEIR ENTIRETY U.N.O. COORDINATE WORK RESTRICTIONS PRIOR TO DEMOLITION.

HOMERUN CONDUIT – STROKES INDICATE QUANTITY OF CONDUCTORS

CONDUIT/WIRE CONCEALED IN WALL OR ABOVE CEILING EXCEPT IN EXPOSED STRUCTURE AREAS 1/2"-2 #12 & 1 #12 GND THWN U.N.O.

CONDUIT AND/OR WIRE BELOW FLOOR OR GRADE 3/4"-2 #12 & 1 #12 GND THWN UNLESS NOTED

EXISTING CONDUIT AND/OR CONDUCTORS TO REMAIN (SHOWN LIGHT)

OH — OH — OVERHEAD POWER LINES

CONDUIT RISER UP/DOWN

CONDUIT STUB OUT

S^{a}_{b} — SINGLE POLE SWITCH @ +48" TO TOP UNLESS NOTED
a = DEVICE SWITCH IDENTIFICATION (LOWERCASE)
IF b:
F = 3 SPEED SWITCH; 2 = 2 POLE SWITCH; 3 = 3-WAY SWITCH; 4 = 4-WAY SWITCH; L = BACKLIT SWITCH
D = DIMMER SWITCH; K = KEY OPERATED SWITCH; M = MOTION SENSOR SWITCH; T = THERMAL OVERLOAD SWITCH; TM = SWITCH WITH DIGITAL TIMER

S_A — SWITCH BANK (IDENTIFIED WITH UPPERCASE)

SINGLE RECEPTACLE @ +18" TO CENTER UNLESS NOTED

WALL MOUNTED DUPLEX RECEPTACLE @ +18" TO CENTER U.N.O.
= GFCI RECEPTACLE
= DOUBLE DUPLEX RECEPTACLE
= 1/2 SWITCHED (BOTTOM HALF) DUPLEX RECEPTACLE

$^{a}_{b}$ IF a:
C = RECEPTACLE INSTALLED ABOVE COUNTER
H = RECEPTACLE INSTALLED HORIZONTALLY
IF b:
MOUNTING HEIGHT IN INCHES TO TOP OF RECEPTACLE

SPECIAL RECEPTACLE @ +18" TO CENTER UNLESS NOTED

IF a:
R = RELAY; C = CONTACTOR; P = POWER SUPPLY
CB = CIRCUIT BREAKER; TC = TIME CLOCK; PB = PUSH BUTTON TYPE CONTROL STATION

^{x} — TELEPHONE/DATA OUTLET
(X) 4-PAIR CAT-6 CABLES (TYPE 'H')
PROVIDE CORRESPONDING FACEPLATE WITH QTY OF PORTS AS REQUIRED, WHERE "X" INDICATED NUMBER OF PORTS.

$^{a}_{A}$ LUMINAIRE IDENTIFICATION
A = LUMINAIRE DESIGNATION (UPPERCASE)
a = SWITCH DESIGNATION (LOWERCASE)

SURFACE MOUNT TROFFER

LUMINAIRE ON EMERGENCY CIRCUIT OR INTEGRAL BATTERY BACK-UP

SUSPENDED LUMINAIRE

DOWNLIGHT LUMINAIRE

WALL MOUNTED LUMINAIRE

EMERGENCY BATTERY LIGHTING UNIT WITH TWIN HEADS

EMERGENCY BATTERY LIGHTING UNIT WITH TWIN HEADS AND EXIT SIGN

SURFACE MOUNTED PANELBOARD

FLUSH MOUNTED PANELBOARD

MAIN SWITCHBOARD, MOTOR CONTROL CENTER OR DISTRIBUTION BOARD

CONCRETE PULLBOX WITH HEAVY DUTY STEEL TRAFFIC COVER

UTILITY PULLBOX

TRANSFORMER (SIZE AND CLEARANCES BASED ON KVA RATING)

METER

N — NON-FUSED DISCONNECT SWITCH

F — FUSED DISCONNECT SWITCH

J^{a} — JUNCTION BOX, IF a:
DO = DOOR HOLD OPEN
S = SIGNAGE
CF = CEILING FAN

COMBINATION METER/MAIN

FUSIBLE SWITCH

M — SINGLE METER WITH CT,

CIRCUIT BREAKER

TRANSFORMER

HP — MOTOR LOAD

AUTOMATIC TRANSFER SWITCH

GROUND BUS & GROUND ELECTRODES

ELECTRICAL ABBREVIATIONS

AF	AMP FUSE (FOR FUSES), AMP FRAME (FOR CIRCUIT BREAKERS)
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	LOCAL AUTHORITY HAVING JURISDICTION
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
MTS	MANUAL TRANSFER SWITCH
C	CONDUIT
CONT	CONTINUATION
CU	COPPER
CW	COLD WATER PIPE
AFCI	INDICATES ARC FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL
GFCI	GROUND FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL
GFI	GROUND FAULT CIRCUIT INTERRUPTER WITH DEDICATED NEUTRAL
GFP	GROUND FAULT PROTECTION
GND	GROUND
HELCO	ELECTRICAL UTILITY COMPANY
IWP	IN-USE WEATHER-PROOF (NEMA 3R)
LO	LUGS ONLY (SEE ALSO MLO)
MCB	MAIN CIRCUIT BREAKER
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE, AS ADOPTED BY THE AHJ
P	POLE
PH	PHASE
PNL	INDICATES PANEL
S/N	SOLID NEUTRAL
TYP	TYPICAL
UPS	UNINTERRUPTIBLE POWER SYSTEM
WP	WEATHER-PROOF (NEMA 3R)
XFMR	TRANSFORMER
UNO	UNLESS NOTED OTHERWISE
(D)	DEMOLITION
(E)	EXISTING
(N)	NEW
(R)	RELOCATE/RELOCATED
+18"	INDICATES MOUNTING HEIGHTS ARE TO CENTERLINE OF DEVICE AFF OR AFG

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

K. I. B. WALTZ
LICENSED PROFESSIONAL ENGINEER
Exp. 04/30/22
No. 18572-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE

APRIL 30, 2022
EXPIRATION DATE OF LICENSE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

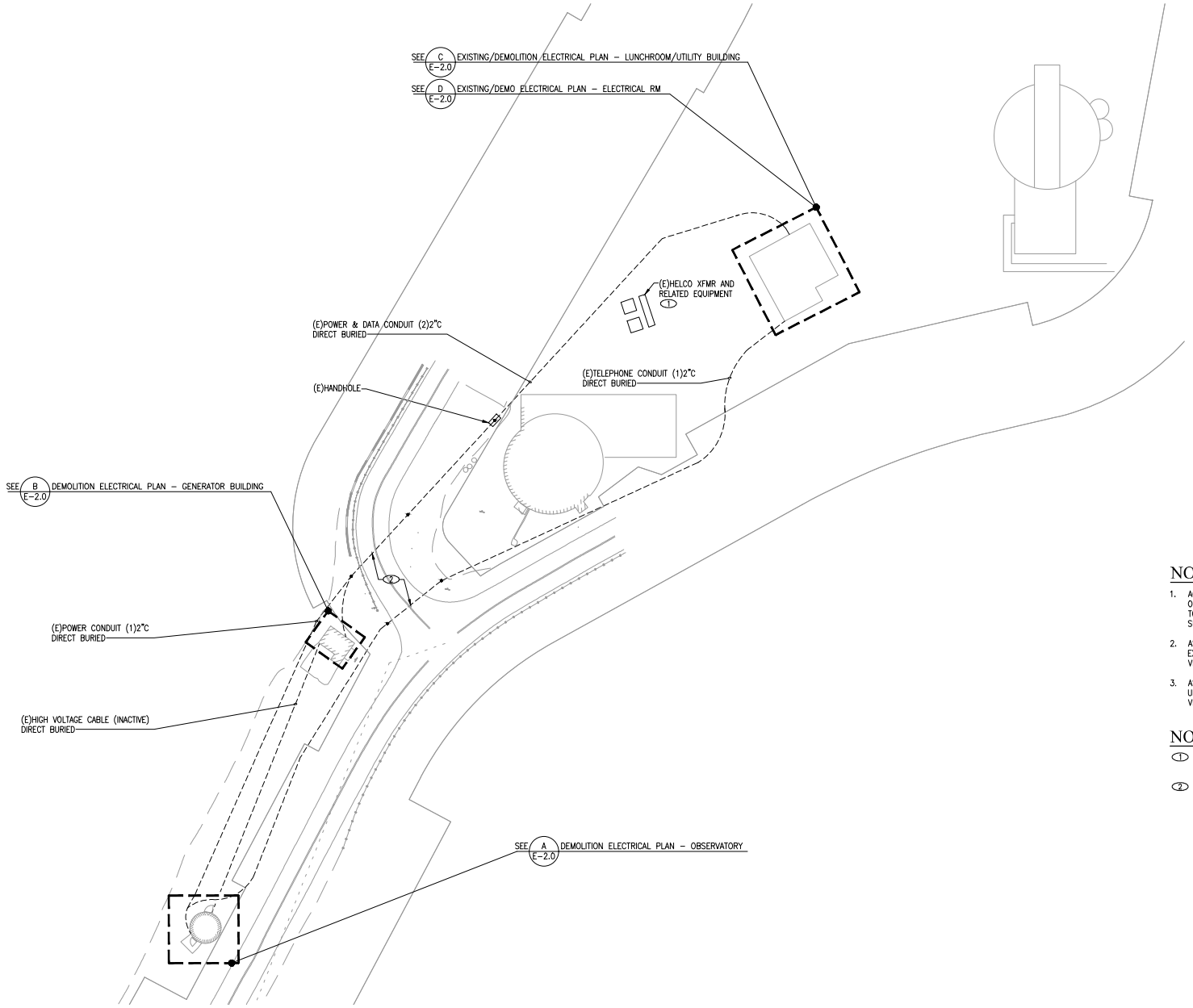
University of Hawai`i at Hilo

ELECTRICAL SYMBOLS, IECC & ABBREVIATIONS

SSFM INTERNATIONAL, INC.

DESIGNED BY:	CHECKED BY:	PROJECT NO.	SHEET
CF	EW	UHH-16029	E-0.0
DRAWN BY:	APPROVED BY:	DATE	
CF	EW	AUG 2021	
SCALE: AS NOTED			OF ... SHTS

SHEET SIZE: 24" X 36"



A OVERALL ELECTRICAL SITE PLAN

SCALE: 1" = 30' 0 30' 60'

NOTICES

1. ACCURACY OF UTILITY LINES FOR DIAGRAMMATIC PURPOSES ONLY. ACTUAL LOCATIONS TO BE DETERMINED THROUGH TONING AND ON SITE VERIFICATION. PRIOR TOP ANY WORK SUBMIT DOCUMENTATION OF TONED UTILITIES FOR REVIEW.
2. ASSUME DEPTH OF 18" DIRECT BURIED CONDITION UNDER EXISTING GRADE FOR BIDDING PURPOSES. CONTRACTOR TO VERIFY IN FIELD.
3. ASSUME DEPTH OF 24" CONCRETE ENCASED CONDITION UNDER ROADWAY FOR BIDDING PURPOSES. CONTRACTOR TO VERIFY IN FIELD.

NOTES

1. TRANSFORMER POWERS UH88 AND MUST REMAIN IN PLACE.
2. CONDUIT IS CONCRETE ENCASED BENEATH ROADWAY.

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

ELI B. WALTZ
LICENSED PROFESSIONAL ENGINEER
Exp. 04/30/22
No. 18574-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE

APRIL 30, 2022
EXPIRATION DATE OF LICENSE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

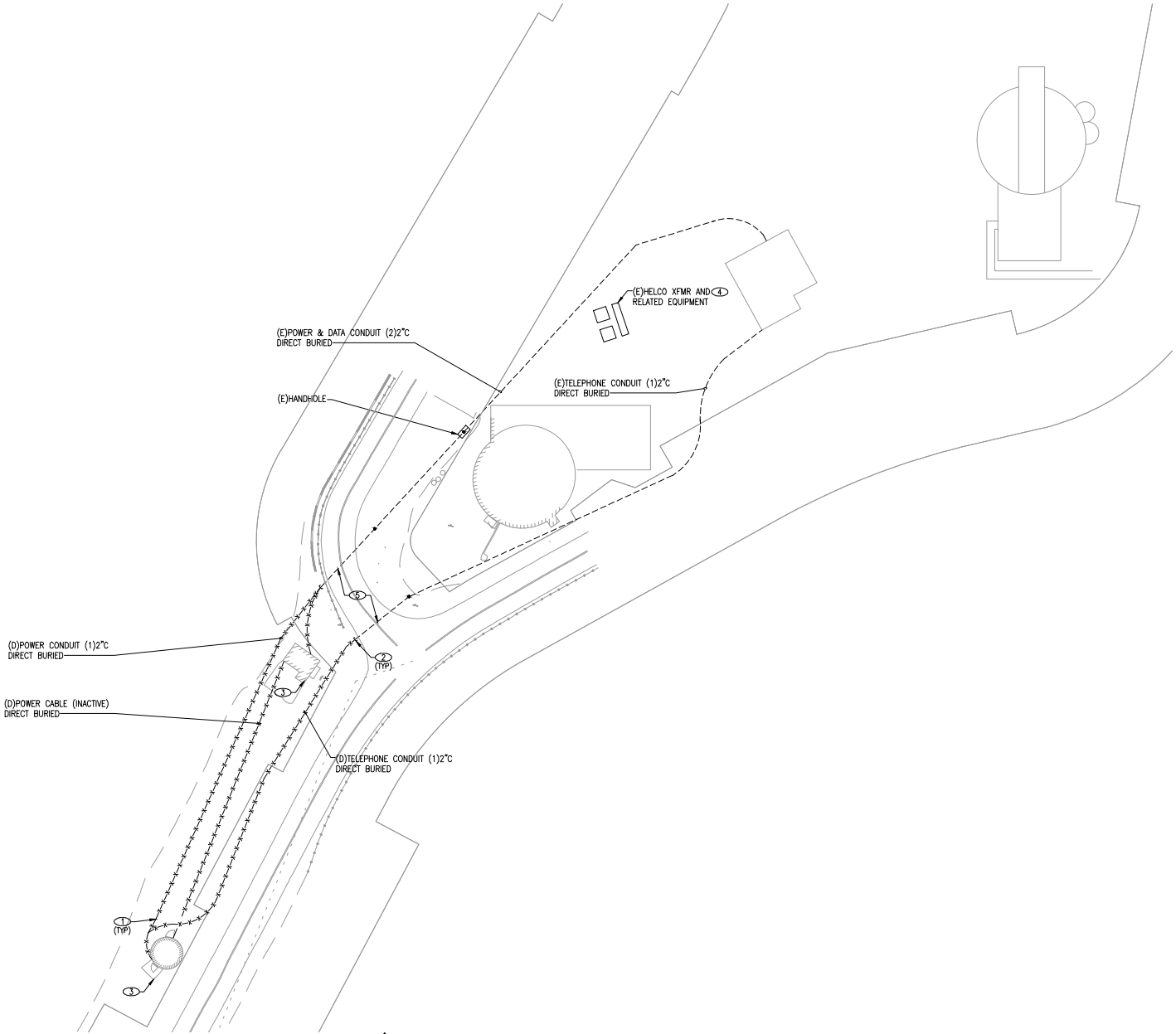
University of Hawai`i at Hilo

OVERALL ELECTRICAL SITE PLAN

SSFM INTERNATIONAL, INC.

DESIGNED BY: CF	CHECKED BY: EW	PROJECT NO. UHH-16029	SHEET E-1.0
DRAWN BY: CF	APPROVED BY: EW	DATE: AUG 2021	
SCALE: AS NOTED			OF. . . . . SHTS

SHEET SIZE: 24" X 36"



A EXISTING/DEMOLITION ELECTRICAL PLAN SITE
SCALE: 1" = 30'
0 30' 60'
N

NOTICES

1. ASSUME DEPTH OF 18" DIRECT BURIED CONDITION UNDER EXISTING GRADE FOR BIDDING PURPOSES. CONTRACTOR TO VERIFY IN FIELD.
2. ASSUME DEPTH OF 24" CONCRETE ENCASED CONDITION UNDER ROADWAY FOR BIDDING PURPOSES. CONTRACTOR TO VERIFY IN FIELD.

NOTES

(1) REMOVE CONDUCTORS INSIDE CONDUIT FROM OBSERVATORY AND GENERATOR BUILDING BACK TO SOURCE.

(2) DEMOLISH CONDUIT AND DIRECT BURIED CABLES FROM OBSERVATORY TO ROADWAY. CAP EXISTING CONDUIT TO REMAIN IN PLACE.

(3) SEE ARCHITECTURAL DRAWINGS FOR BUILDING AND FOUNDATION DEMOLITION.

(4) TRANSFORMER POWERS UH88 AND MUST REMAIN IN PLACE.

(5) CONDUIT IS CONCRETE ENCASED BENEATH ROADWAY.

REVISION NO.	SYMBOL	DESCRIPTION	SHT.__ OF__	DATE

LICENSED PROFESSIONAL ENGINEER
Exp. 04/30/22
No. 18574-E
ELI B. IWAI JR.
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE

APRIL 30, 2022
EXPIRATION DATE OF LICENSE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

EXISTING/DEMOLITION ELECTRICAL PLAN SITE

SSFM INTERNATIONAL, INC.

DESIGNED BY: CF	CHECKED BY: EW	PROJECT NO. UHH-16029	SHEET E-1.1
DRAWN BY: CF	APPROVED BY: EW	DATE: AUG 2021	OF... ... ...SHTS
SCALE: AS NOTED			

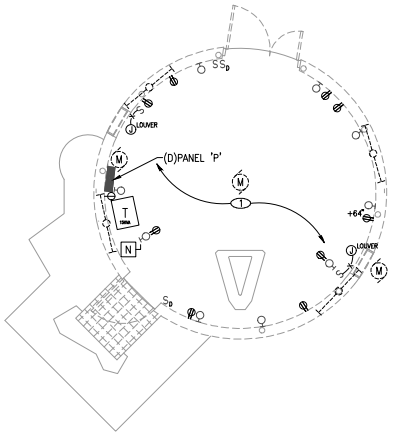
SHEET SIZE: 24" X 36"

NOTES

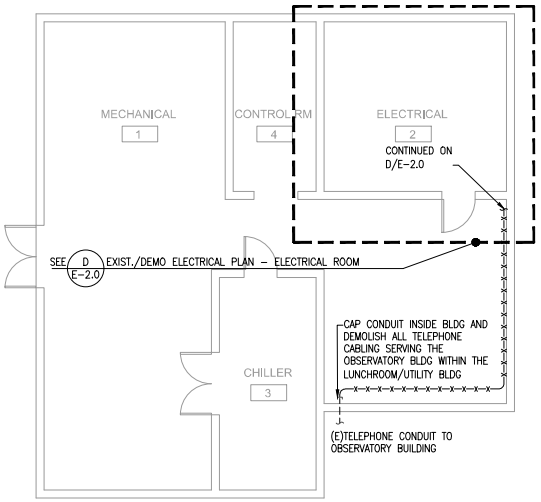
1. REMOVE ALL EXISTING ELECTRICAL CONDUIT, LIGHT FIXTURES, OUTLETS, WIRING, EQUIPMENT AND WIRING DEVICES IN THIS BUILDING. REMOVE ALL FEEDERS COMPLETE BACK TO MAIN SERVICE DISCONNECT

NOTICES

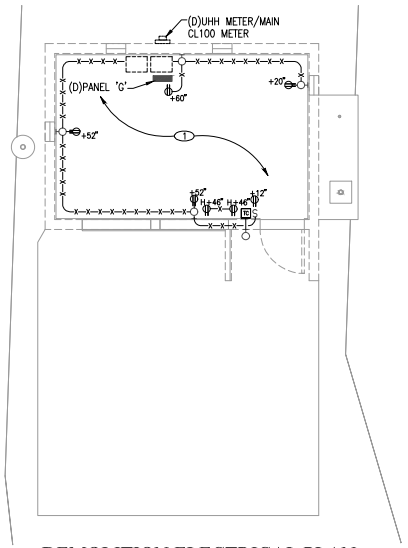
1. ACCESS TO THE LUNCH ROOM/UTILITY BUILDING SHALL BE MAINTAINED AT ALL TIMES.



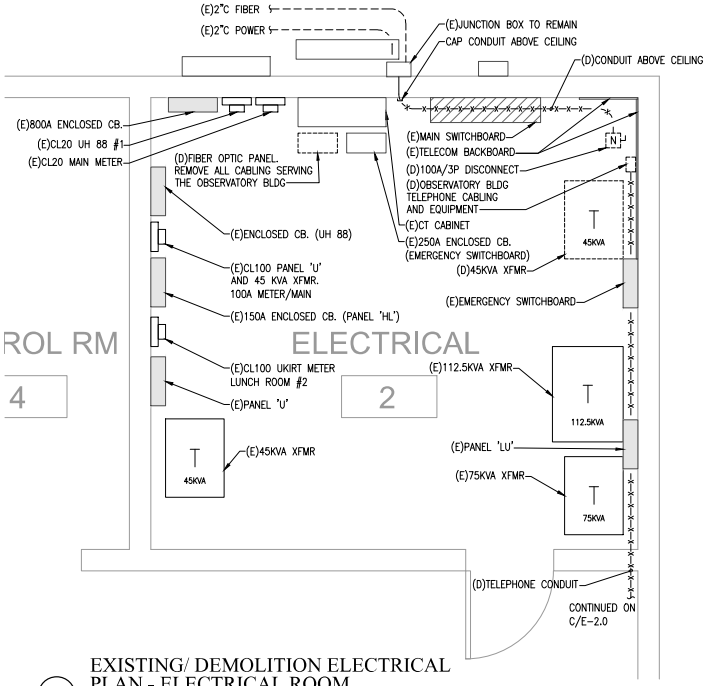
A DEMOLITION ELECTRICAL PLAN - OBSERVATORY
SCALE: 1/4" = 1'-0"



C EXISTING/ DEMOLITION ELECTRICAL PLAN - LUNCHROOM/UTILITY BUILDING
SCALE: 3/16" = 1'-0"



B DEMOLITION ELECTRICAL PLAN - GENERATOR BUILDING
SCALE: 1/4" = 1'-0"



D EXISTING/ DEMOLITION ELECTRICAL PLAN - ELECTRICAL ROOM
SCALE: 1/2" = 1'-0"

LEGEND

	ELECTRICAL DEMOLITION. REMOVE EQUIPMENT AND APPURTENANCES IN THEIR ENTIRETY U.N.O. DENOTED WITH (D).
	DEMOLISH CONDUIT AND/OR CONDUCTORS. DENOTED WITH (D).
	EXISTING CONDUIT AND/OR CONDUCTORS TO REMAIN. DENOTED WITH (E). (SHOWN LIGHT)
	CONDUIT/WIRE CONCEALED IN WALL OR ABOVE CEILING
	CONDUIT AND/OR WIRE BELOW FLOOR OR GRADE

REVISION NO.	SYMBOL	DESCRIPTION	SHT. OF	DATE

ELI B. IWALT
LICENSED PROFESSIONAL ENGINEER
Exp. 04/30/22
No. 16572-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE

APRIL 30, 2022
DATE
EXPIRATION DATE OF LICENSE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

DEMOLITION ELECTRICAL PLANS

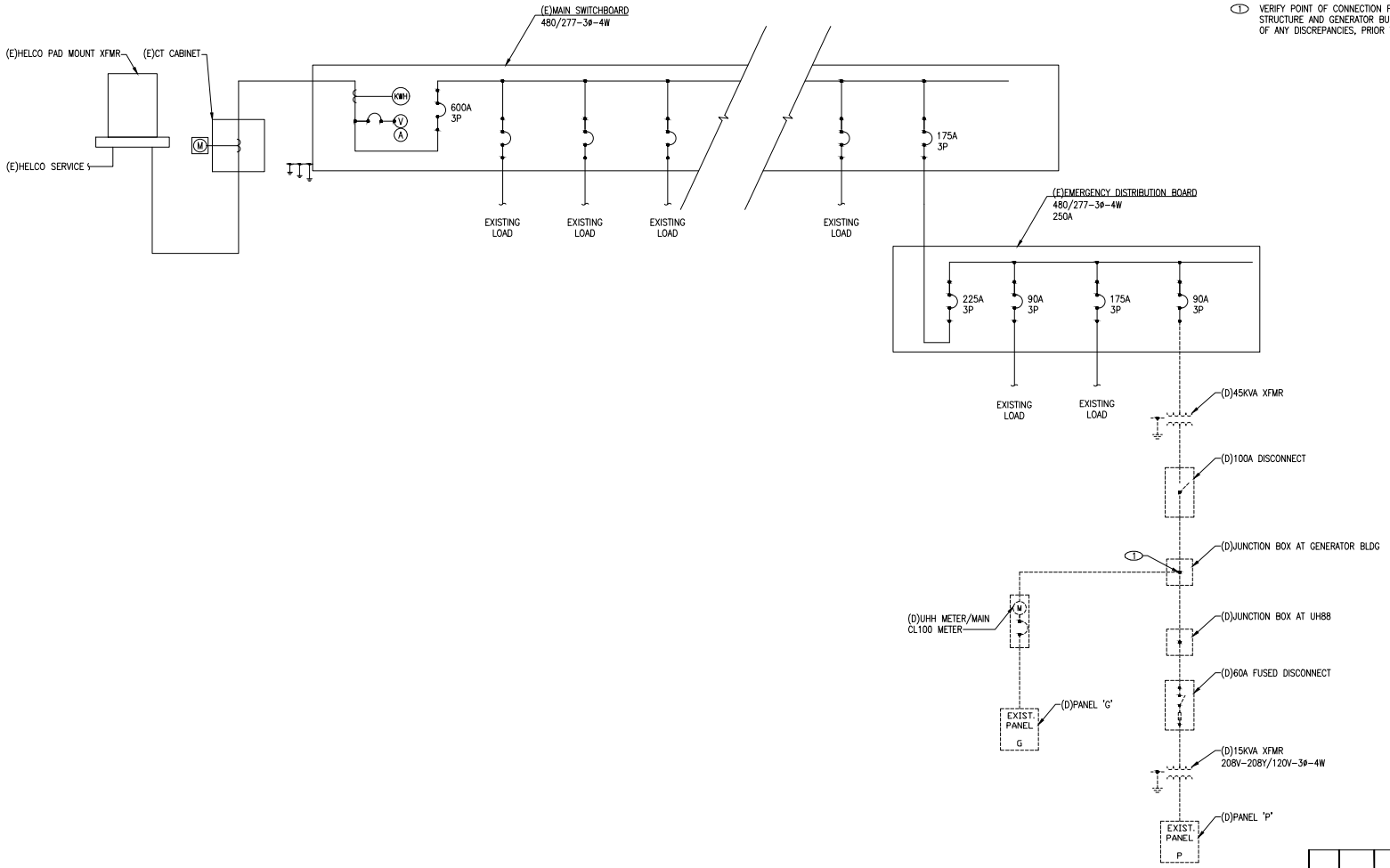
SSFM INTERNATIONAL, INC.

DESIGNED BY: CF	CHECKED BY: EW	PROJECT NO. UHH-16029	SHEET E-2.0
DRAWN BY: CF	APPROVED BY: EW	DATE: AUG 2021	OF. . . . . SHTS
SCALE: AS NOTED			

SHEET SIZE: 24" X 36"

NOTES

1. VERIFY POINT OF CONNECTION FOR OBSERVATORY STRUCTURE AND GENERATOR BUILDING. NOTIFY ENGINEER OF ANY DISCREPANCIES, PRIOR TO COMMENCING WORK.



1 EXISTING/DEMOLITION SINGLE LINE - LUNCHROOM/UTILITY BUILDING
NO SCALE

REVISION NO.	SYMBOL	DESCRIPTION	SHT.__ OF__	DATE

UNIVERSITY OF HAWAI`I AT HILO
STATE OF HAWAI`I

Hōkū Ke`a Decommissioning

University of Hawai`i at Hilo

EXISTING/DEMOLITION SINGLE LINE-LUNCHROOM/UTILITY BLDG

SSFM INTERNATIONAL, INC.

ELI B. IWAI IV
LICENSED PROFESSIONAL ENGINEER
Exp. 04/30/22
No. 16574-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THE PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE

APRIL 30, 2022
EXPIRATION DATE OF LICENSE

DESIGNED BY: CF	CHECKED BY: EW	PROJECT NO. UHH-16029	SHEET E-3.0
DRAWN BY: CF	APPROVED BY: EW	DATE: AUG 2021	
SCALE: AS NOTED			OF. . . . . SHTS

SHEET SIZE: 24" X 36"

ATTACHMENT D

HRS Chapter 205A, Coastal Zone Management

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Hawai‘i Coastal Zone Management Program

The National Coastal Zone Management (CZM) Program was created with the passage of the Coastal Zone Management Act of 1972 (CZMA). Hawai‘i’s CZM Program, established pursuant to HRS Chapter 205A, as amended, is administered by the State of Hawai‘i Office of Planning and provides for the beneficial use, protection, and development in the State’s coastal zone. The objectives and policies of the Hawai‘i CZM Program encompass a wide array of concerns including impacts to recreational resources, historic and archaeological resources, coastal scenic resources and open space, coastal ecosystems, coastal hazards, and the management of development. The Hawai‘i CZM area includes all lands within the State and the areas seaward to the extent of the State’s management jurisdiction. Therefore, the Proposed Action is located within the CZM area.

The Proposed Action is consistent with the following objectives and policies of the Hawai‘i CZM Program:

RECREATIONAL RESOURCES
Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

1) Improve coordination and funding of coastal recreational planning and management.
2) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
    a) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas.
    b) Requiring replacement of coastal resources having significant recreational value including, but not limited to surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable.
    c) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value.
    d) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation.
    e) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources.
    f) Adopting water quality standards and regulating point and non-point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters.
    g) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing.
    h) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of Hawai‘i Revised Statutes, section 46-6.

Discussion: The Proposed Action is located at the summit of Maunakea and would have no impacts on coastal recreational opportunities.

HISTORIC RESOURCES
Objective: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

1) Identify and analyze significant archaeological resources.
2) Maximize information retention through preservation of remains and artifacts or salvage operations.
3) Support state goals for protection, restoration, interpretation, and display of historic resources

Discussion: The Proposed Action includes site restoration that would restore the site to a basic topography consistent with the area. Removal of the Observatory Building, Generator Building, and associated utilities would enhance the summit experience for cultural practitioners and other visitors, enhance the Hawai‘i Register of Historic Places integrity of setting of the Kūkahau‘ula TCP and Mauna Kea Summit Region Historic District, and improve the visual setting of the summit.

SCENIC AND OPEN SPACE RESOURCES
Objective: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

1) Identify valued scenic resources in the coastal zone management area.
2) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline.
3) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources.
4) Encourage those developments that are not coastal dependent to locate in inland areas.

Discussion: The Proposed Action includes site restoration that would restore the site to a basic topography consistent with the area. Removal of the Observatory Building, Generator Building, and associated utilities would enhance the summit experience for cultural practitioners and other visitors.

COASTAL ECOSYSTEMS
Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

1) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources.
2) Improve the technical basis for natural resource management.

3) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance.

4) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land water uses, recognizing competing water needs.

5) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion: The Proposed Action is located at the summit of Maunakea and would have no impacts on coastal ecosystems.

ECONOMIC USES
Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

1) Concentrate coastal development in appropriate areas.

2) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area.

3) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
   a) Use of presently designated locations is not feasible;
   b) Adverse environmental effects are minimized; and
   c) The development is important to the State's economy.

Discussion: The Proposed Action does not include development. The Purpose of the Proposed Action is to decommission and remove the Hōkū Keʻa Observatory Building, Generator Building, and associated telecommunications and electrical infrastructure.

COASTAL HAZARDS
Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policies:

1) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards.

2) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards.

3) Ensure that developments comply with requirements of the Federal Flood Insurance Program.

4) Prevent coastal flooding from inland projects.

Discussion: The Proposed Action is located at the summit of Maunakea and would have no impacts on coastal hazards.

MANAGING DEVELOPMENT

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:

1) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development.
2) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements.
3) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion: The Draft Environmental Assessment is being provided for public comment and review. To facilitate the agency review process for the required permits for the Proposed Action, UH Hilo would meet with the various agencies prior to submitting permit application packages. The permit review process would provide additional opportunities for public involvement.

PUBLIC PARTICIPATION

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

1) Promote public involvement in coastal zone management processes.
2) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities.
3) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion: Opportunities for public awareness, education, and participation in coastal management are provided through the regulatory review processes. The Draft Environmental Assessment is being provided for public comment and review. Additional opportunities for review would come during the permit review process.

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

Policies:

1) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion.
2) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities.
3) Minimize the construction of public erosion-protection structures seaward of the shoreline.
4) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor.

5) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.

Discussion: The Proposed Action is located at the summit of Maunakea; therefore, there would be no effect on the use of beaches for public use and recreation.

MARINE RESOURCES

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies:

1) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial.

2) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency.

4) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone.

5) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources.

6) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The Proposed Action is located at the summit of Maunakea, away from marine resources.

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ATTACHMENT E
Environmental Assessment

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ATTACHMENT F
BMPs and Other Measures

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Best Management Practices and Other Measures to Minimize Impacts

GENERAL

The following general BMPs would be implemented to minimize impacts during project activities:

- All construction shall conform to the 2018 International Building Code and the latest State of Hawai'i amendments and ordinances.
- All work shall be confined to the designated area of work. Any damage caused by the contractor shall be repaired by the contractor.
- All items that are to remain in place shall be protected during the construction period.
- All work shall be in compliance with the requirements of the latest *Mauna Kea Comprehensive Management Plan* and other construction-related plans.
- All employees will receive training on site conditions (including potential contamination sources), permit requirements, and required BMPs.
- Premises shall be kept free from accumulation of waste materials, construction debris, and rubbish.
- Waste materials, construction debris and rubbish shall be disposed of lawfully and in accordance with the Construction Waste Management Plan.
- If the contractor shall perform work causing unique noise, odors, or other disturbances outside of regular business hours, such work shall be scheduled with Maunakea Observatories Support Services (MKSS).
- A monitor would be on-site during site restoration to monitor fill placement and compaction.

DUST CONTROL

All construction activities would comply with the provisions of HAR Chapter 11-60.1, Air Pollution Control, and HAR Chapter 11.60.1-33, Fugitive Dust. A dust control plan would be developed and implemented to minimize fugitive dust during construction, to be approved by the DOH. Measures to control fugitive dust during construction may include, but not be limited to, the following:

- Planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact.
- Providing an adequate water source at the site prior to start-up of construction activities.
- Minimizing airborne, visible fugitive dust from shoulders and access roads.
- Providing reasonable dust control measures during weekends, after hours, and prior to daily start-up of construction activities.
- Controlling airborne, visible fugitive dust from debris being hauled away from the project site.

Additionally, contractors would be required to maintain equipment with emissions controls.

INVASIVE SPECIES

The following BMPs detailed in the *Maunakea Invasive Species Management Plan* (Vanderwoude, et.al, 2015) will be implemented to minimize the spread of invasive species:

- All vehicles shall be externally cleaned at least monthly and the interior maintained in a clean condition at all times prior to arrival at the Saddle Road and Maunakea Access Road junction. (SOP #1)
- All vehicles with three or more axles and heavy equipment shall be thoroughly cleaned prior to arrival at the Saddle Road and Maunakea Access Road junction and inspected by a DLNR-approved biologist. (SOP #1)
- Aggregate and fill materials shall be inspected by a DLNR-approved biologist for plant, animal, and earthen materials. Both the load and the site where aggregate and fill materials were extracted or stored shall be inspected. (SOP #2)

The following applicable measures detailed in the USFWS's Biosecurity Protocol – Hawaii Island (July 2018) would be implemented to minimize the introduction of invasive species:

- All work vehicles, machinery, and equipment would be cleaned, inspected by its user, and found free of mud, dirt, debris, and invasive species prior to entry to the Mauna Kea Forest Reserve.
    - Vehicles, machinery, and equipment must be thoroughly pressure washed in a designated cleaning area and visibly free of mud, dirt, plant debris, insects, frogs (including frog eggs), and other vertebrate species such as rats, mice, and non-vegetative debris. A hot water wash is preferred. Areas of particular concern include bumpers, grills, hood compartments, areas under the battery, wheel wells, undercarriage, cabs, and truck beds (truck beds with accumulated material (intentionally placed or fallen from trees) are prime sites for hitchhikers).
    - The interior and exterior of vehicles, machinery, and equipment must be free of rubbish and food. The interiors of vehicles and the cabs of machinery must be vacuumed clean. Floor mats shall be sanitized with a solution of >70% isopropyl alcohol or a freshly mixed 10% bleach solution.
    - Any machinery, vehicles, equipment, or other supplies found to be infested with ants (or other invasive species) must not enter natural areas or native habitat. Treatment is the responsibility of the equipment or vehicle owner and operator.
- Base yards and staging areas inside and outside areas must be kept free of invasive species.
    - Base yards and staging areas should be inspected at least weekly for invasive species and any found invasive removed immediately. Pay particular attention to where vehicles are parked overnight, keeping areas within 10-meters of vehicles free of debris.
    - Project vehicles or equipment stored outside of a base yard or staging area, such as a private residence, should be kept in a pest free area.
- Contractors shall visually inspect and clean clothes, boots, pack, radio harness, tools and other personal gear and equipment, for seeds, soil, plant parts, insects, and other debris prior to going to the project site and prior to leaving the project site. A small brush is handy for cleaning boots, equipment, and gear. Soles of shoes should be sanitized using a solution of >70% isopropyl alcohol or a freshly mixed 10% bleach solution.

CULTURAL, ARCHAEOLOGICAL, AND HISTORIC RESOURCES

The following measures will be implemented, as required by the CMP and the CRMP, to minimize potential impacts to archaeological and historic resources:

- Access would be maintained to the summit region during decommissioning and restoration activities.
- All persons involved with the deconstruction and restoration activities would be educated about the historical and cultural significance of the Maunakea summit area and shall be given training as to what constitutes respectful and sensitive behavior while on the summit area.
- A Cultural Monitoring Plan would be developed and reviewed by KKM and approved by the CMS Director prior to implementation of the Proposed Action. A cultural monitor will be present during all deconstruction and restoration activities.
- An independent qualified archaeologist would be retained by the contractor to monitor all ground disturbing activities for historic features such as artifact concentrations of shell or charcoal.
    - The archaeological monitor would have the authority to order that any or all construction activity cease in the event any historic properties or human remains are encountered.
    - Per HRS Chapter 6E, if the contractor encounters possible or suspected historical features, all work would immediately be suspended and CMS would be notified, who in turn would notify SHPD.
    - In addition, Kahu Kū Mauna Council would be consulted.
    - If the feature is deemed significant, an appropriate mitigation plan (which may include recovery) would be developed jointly by SHPD and UH Hilo.
- A Rock Movement Plan, developed by the contractor and approved by CMS, would be included in the construction BMPs.
- The procedures detailed in the SHPD-approved Long-term Historic Property Monitoring Plan for the University of Hawai‘i Management Areas on Mauna Kea would be followed (Gosser et al., 2014).
- In the unlikely event that any human remains or any burial goods over fifty years old are uncovered at any time after construction commences, the procedures set out in HRS Chapter 6E-43.6 and HAR 13-300-40 would be followed.
    - This includes immediately suspending all work in the area and notifying CMS, who in turn would notify SHPD.
    - Work shall not commence until a treatment and disposition plan has been developed by SHPD in consultation with the Hawai‘i Island Burial Council, Office of Hawaiian Affairs, OMKM, and any recognized descendants.

SITE RESTORATION

The following BMPs will be implemented to minimize impacts during site restoration activities:

- A geologist will be on site to monitor earthwork operations and observe whether undesirable materials are encountered during the excavation and scarification process and confirm whether the exposed subsurface conditions are similar to those described above.
- A geologist will observe and/or test imported fill materials prior to being transported to the site for the intended use.
- Any grading would be in conformance with the Hawai‘i County Grading Ordinance.
- All construction would conform to the 2018 International Building Code and the latest State of Hawai‘i amendments and ordinances.

- All work would be confined to the designated area of work. Any damage caused by the contractor would be repaired by the contractor.
- All work would comply with the requirements of the latest Mauna Kea Comprehensive Management Plan and other construction-related plans.

TRAFFIC AND TRANSPORTATION

The following measures will be implemented to minimize traffic and transportation related impacts:

- Equipment and materials would be transported to and from the project site during non-peak hours.
- All construction vehicles would be maintained in proper operating condition and loads would be properly secured to prevent dust, debris, leakage, or other adverse conditions from affecting public roadways.
- The majority of project personnel (e.g., equipment operators, laborers, and electricians) would be transported to the project site via van from either Halepōhaku or other central location.

WATER RESOURCES

The following measures would be implemented to minimize potential impacts to water resources:

- Construction plans and specifications would include BMPs to minimize erosion on the project site during and after construction, as well as measures to contain runoff on-site during construction.
- Temporary erosion control measures would be used during construction to prevent soil loss and to minimize surface runoff into downslope intermittent streams and Lake Waiau.